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The Agency's Programme and Budget 2006–2007

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OVERVIEW

INTRODUCTION

1. As was the case for the last two biennia, the formulation of the Agency's programme and budget for 2006–2007 has followed the results based approach described in document GOV/2000/13 of 31 March 2000. However, the preparation process has been streamlined as described in the Note by the Secretariat (2004/Note 1) of 16 January 2004.

2. Although the Agency's Medium Term Strategy (MTS) relates to the period 2001–2005, its vision and goals are long term in nature and remain valid for the 2006–2007 period. It thus served to guide the preparation of the programme for the 2006–2007 cycle and also as a foundation for the development of the MTS 2006–2011. The latter (GOV/2005/8) was prepared under a Working Group of Member States established by the Chairman of the Board of Governors with active participation of the Secretariat and was endorsed by the Board at its session in March 2005. The proposed programme for 2006–2007 is consistent with the new MTS.

3. The Secretariat has, as expected, based the development of the programme and budget on the 'Package Proposal' (GOV/2003/48), agreed to by the Board of Governors in July 2003, in concluding the negotiations on the budget for 2004–2005, and subsequently brought to the attention of the 47th General Conference (GC(47)/INF/7). That document specified details of the regular budget envelopes for each major programme for each year of the 2004–2005 and 2006–2007 biennia, based on the phasing in of the regular budget increase approved by the Board in response to the Secretariat's proposals for 2004–2005.

4. In accordance with the streamlined process referred to above, the document "Strategic Issues and Changes for the 2006–2007 Programme and Budget" (GOV/2004/23) replaced the more detailed programme planning documents of other recent biennia. It described the changes in the structure of the programme and details of strategic issues and changes to be reflected in the programme proposals for 2006–2007 and of requirements for additional financial resources.

DEVELOPMENT OF THE PROGRAMME AND BUDGET

Programme structure

5. As in other recent biennia under the results based approach, the hierarchy used in this programme and budget cycle is: major programme, programme, subprogramme and project. The term *project* denotes coherent clusters of activities that have an identifiable commencement date and an expected termination date. When the cluster of activities is repetitive in nature from one cycle to the next, the term *recurrent project* is used and hence no beginning and ending dates are given. It should be noted, however, that in certain substantive major programmes, although some projects have titles indicating topics of a continuous nature, most of the scientific and technical activities have a finite duration. Projects with such titles, expected to continue in future biennia, are shown with durations reflecting the starting years of their earliest activities and the ending years of their latest activities.

6. As described in the *Strategic Issues and Changes* document (GOV/2004/23), the only significant change in programme structure is that Programme R (Library and Information Support) has been moved from Major Programme 5 to Major Programme 1. This transfer is the result of an assessment that this move would facilitate greater integration between INIS (International Nuclear Information System), already in Major Programme 1, and the IAEA Library.

7. Adjustments have been made at the subprogramme level to reflect consolidation of activities and outputs leading towards the same or similar outcomes. In this respect, there is a net reduction in the total number of subprogrammes. The 2006–2007 programme now includes 77 subprogrammes compared with 85 in the 2004–2005 biennium. Major Programme 3 has undergone the largest consolidation. Through regrouping and merging of activities, the number of subprogrammes is now just 20, compared with 27 in 2004–2005. Similarly, Major Programme 5 now contains only 7 subprogrammes compared with 11 in 2004–2005 as a result of regrouping all activities in Programme S (Conference, Translation and Publishing Services) into one subprogramme.

Lessons learned from previous biennia

8. Full account has been taken of the lessons learned in the following reviews and evaluations:

- the Programme Performance Report for 2002–2003 (GOV/2004/22);
- the 2003 Programme Evaluation Report (GOV/INF/2004/2);
- the evaluation of the effectiveness and efficiency of the safeguards programme (Major Programme 4) and the specific technical review of the safeguards criteria undertaken by the Standing Advisory Group on Safeguards Implementation (SAGSI);
- the review of processes and assessment of the workload of the Department of Technical Cooperation (GOV/INF/2004/5);
- other reviews of different areas of the Agency's programme.

Details of the lessons learned relevant to each of the major programmes are set out under the Programme and Resources Highlights section of the Overview.

9. The safeguards and technical cooperation (TC) reviews were undertaken in fulfilment of requests by Member States in the 'Package Proposal'.

10. Since performance indicators are at the centre of the assessment of achievement of outcomes, special care has been taken in the formulation of both outcomes and performance indicators. The recommendations made by the External Auditor in document GC(47)/4 relating to the criteria for selection of performance indicators have also been taken into consideration, as has the benchmarking framework established in the Joint Inspection Unit (JIU) report on *Managing for Results in the United Nations System* (JIU/REP/2004/5).

11. The mechanisms established within the Secretariat for the coordination of the cross-cutting areas of the Agency's programme (already identified in the previous biennium, namely: environment, quality assurance, knowledge management, research reactors and security) have been extensively used in the formulation of the different activities in order to ensure consistency and coherence, particularly in terms of expected outcomes, and to avoid any duplication or overlap. The same coordination mechanisms have also been used for other areas such as decommissioning, public information, and innovative reactors and fuel cycles.

Priority setting

12. As requested by Member States on several occasions, particularly during the discussions of the programme and budget for 2004–2005, the process of prioritization has continued to be refined. Projects are again ranked relative to each other within each programme using a number of criteria. The general prioritization criteria that apply to all programmes and which were used in the formulation of the programme and budget for 2004–2005 remain, namely:

- statutory responsibility and legal commitments;
- decisions of the Policy-making Organs;
- expressions of priority attached by Member States to various activities;

- recommendations of standing and other review and advisory bodies;
- conclusions and recommendations of evaluation panels.

13. In addition, specific criteria have been developed for prioritization within each programme. These specific criteria relate to the particular nature of the activities in the field covered by the programme. They can be found in the section describing the elements of each programme.

14. For the 2006–2007 biennium, three levels of priorities have been established in each programme, reflecting the fact that the Agency's programme includes only activities of high priority. Projects are then assigned to one of three levels of priority, with priority 1 being the highest.

CAURBs

15. As in previous biennia, recourse has been made to so-called core activities unfunded in the regular budget (CAURBs). These are activities which should, if funding permitted, be part of the Agency's regular budget programme, or in the case of some activities related to Major Programme 4, involve a degree of uncertainty (see para. 70). CAURBs comprise both activities which are expected to be financed from extrabudgetary funds (extrabudgetary CAURBs), and activities for which no funding is currently foreseen. The latter are included in the programme proposals to draw this situation to the attention of Member States, and with a view to attracting extrabudgetary funds. They are identified in the programme for adoption by the Board of Governors so that they may be implemented without further Board approval should voluntary contributions be received or regular budget savings materialize in the course of the biennium. Where such activities are not funded by extrabudgetary contributions or from savings, they will not be implemented.

Budget currency

16. The regular budget estimates for 2006–2007 have, for the first time, been prepared on the basis of the euro rather than the US dollar. This is in accordance with the decision of the Board of Governors (GOV/OR.1086 and GOV/2003/27) at its meeting of 20 November 2003 that from 1 January 2006 the euro should be adopted as the functional currency for the Regular Budget Fund and the Working Capital Fund.

17. While the budget estimates will continue to be presented in a single currency, the split appropriation and assessment system is being retained as envisaged in the changeover to the euro. Under this system, the estimates of budgetary requirements are split between the Agency's two dominant expenditure currencies, the euro and the US dollar. The details are shown in the adjustment formula of the draft appropriation resolution, which is set out in the Annex to this document. This system will, as heretofore, serve to minimize the exposure of the Agency's regular budget to the impact of euro/US dollar exchange rate fluctuations.

Budget rate of exchange

18. The use of a uniform budget rate of exchange over successive biennia facilitates comparison of proposed estimates with the budgets for previous years. With the introduction of the euro as the functional currency from 2006, direct comparisons of the proposed budget for 2006 and 2007 with the US dollar budgets of previous years will require conversion of previous budgets to the euro. For this purpose, a new, simpler and more convenient budget rate of exchange has been adopted. The practice of recent years, up to and including 2005, of using the rate of exchange 0.9229 euro to one dollar is accordingly being discontinued. The budget estimates for 2006–2007 have been prepared using the

more convenient budget rate of exchange of one euro to one US dollar[1]. This new rate of exchange will also be used in preparing future budgets and, thus, will facilitate comparison of budgets from year to year.

19. The decision to use the euro as the new functional currency does not apply to the technical cooperation programme or to extrabudgetary funds, both of which involve predominantly contributions/expenditures in dollars. Nevertheless, to enable the resources available to the Agency to implement its various programmes to be readily summarized in one currency and where appropriate to make comparisons with 2005, all such dollar funds, including corresponding 2005 figures, are expressed in euro at the budget exchange rate of one euro to one dollar.

Budgetary presentation

20. The budgetary presentation, reflecting the methodology of the results based approach, focuses on the resources required to achieve the stated outcomes. The present document contains four summary tables of budgetary resources. Summary Table 1 shows 2004 actual expenditure, regular budget resources for both years of the biennium by programme and major programme, and comparisons with the previous year, including price adjustments. Table 2 is a summary of income. Summary Table 3(a)/3(b) shows total resource requirements by programme and major programme for each year of the biennium (the regular budget at 2006 prices). These tables are complemented by other tables, showing for each major programme the regular budget resources, extrabudgetary funds and unfunded activities. Summary Table 4 shows 2004 actual expenditure, the regular budget estimates for 2006 and 2007 and the price adjustment for 2006 by item of expenditure[2]. Full Agency regular budget staff costs, including such costs relating to Laboratory Activities and Shared Costs, are summarized in Table 7. There are also figures in the respective programme narratives, enclosed in boxes for ease of reference, summarizing the regular budget resources for each subprogramme. These figures are at 2005 prices to facilitate comparison with the last approved budget. In addition, details of CAURBs for which no extrabudgetary funding is available and the estimated funding requirements are listed, for ease of reference, in the table towards the end of each major programme.

21. The overall budget presentation is supported by illustrative pie charts. Two of these appear in the Overview. The first illustrates the resource requirements for the total regular programme for the biennium, including regular budget and CAURBs. The latter group is divided into two parts — CAURBs for which funding from extrabudgetary resources is expected and CAURBs remaining unfunded. The second pie chart illustrates the total resources to be utilized by all Agency programmes for the biennium, including the regular budget, extrabudgetary CAURBs, activities sponsored by other United Nations system organizations, the Nuclear Security Fund (NSF) and funds for the technical cooperation programme. For the regular budget resources, this pie chart distinguishes funds proposed for regular programme implementation from the funds dedicated to support the TC programme (which comprise the funds for Major Programme 6, Management of Technical Cooperation for Development, and the estimated cost of scientific and technical expertise in support of the TC programme provided by the other major programmes).

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[1] The rate has no impact on the level of the budget which, as indicated in the Attachment to the Annex, is determined by the average United Nations dollar-to-euro exchange rate which will be experienced during 2006.

[2] In the interests of clarity, further tables have been added showing the distribution by item of expenditure of the Agency's Laboratory Activities (Table 5) and Shared Costs (Table 6), which appear only as one-line items in Table 4.

22. There are additional pie charts — one for each major programme — giving the total resources for programme execution during the biennium. These charts show the same information for each of the major programmes that the second chart in the summary shows for all Agency programmes. In all cases, the charts are supplemented with a table showing the annual and biennial composition of the figures in the chart.

Price adjustments

23. In calculating the price adjustments, the Agency has, for many years, followed the policy of "semi-full budgeting", a methodology which has been recognized by the United Nations and its various review bodies, for example the JIU. In this methodology, the trends and expectations for salaries and related expenditures, which depend on index movements, and forecasts by the International Civil Service Commission (ICSC), are taken into account. For other items, the actual increases recorded during the last year for which figures are available (in present circumstances the year 2004 compared with 2003), and actual increases, if any, expected during the budget year are included in the price adjustments.

24. For the year 2006, the price adjustments for the various items of expenditure, following the described methodology, are as indicated in Table 4, The Regular Budget by Item of Expenditure, and as described below. As can be seen in this table, the proposed average price adjustment over the 2005 approved budget level is 1.3%. This relatively low level of price adjustment is possible because of the approach taken in dealing with the requirement for an increase in Common Staff Costs (paragraphs 29–31). The adjustments are applied to the budget proposals for 2006 and 2007. A further price adjustment will also be necessary for the second year of the biennium. This adjustment will be included as usual in the simplified budget document for 2007 to be submitted to the governing bodies in 2006. These proposals will follow the same methodology for price increases as in 2006.

Staff costs

25. The principal cost elements which contribute to the price adjustments are staff costs. Details of the increases arising under this heading are given below. It should be noted that staff costs as shown in Table 4 do not represent the full staff costs of the Agency since a substantial proportion of these costs are included in the line items in this table relating to the Laboratory Activities and Shared Costs. To provide more clarity in relation to such costs, the additional tables referred to in the footnote to paragraph 20 show the distribution, by item of expenditure, of the Laboratory Activities (Table 5) and Shared Costs (Table 6). The total staff costs are then summarized in Table 7.

Salaries

26. For year 2006 **Professional** salaries, the price adjustment is based on cost developments over a three year time span. An adjustment of 0.1% over the 2005 budget has been applied based on the net sum of the factors listed in (a)–(c) below which are derived from UN Common System methodology:

(a) The increase that was assumed for year **2004** in the Agency's Budget Update for 2005 was 1.7%, based on a forecast of the International Civil Service Commission (ICSC) of an increase in *post adjustment*. The actual increase for 2004 proved to be 0%; consequently, a *reduction* of 1.7% is required in 2006 to adjust for what actually occurred in 2004.

(b) Based on the ICSC forecast that was then available, an increase of 1.7% was applied in the Agency's Budget Update for 2005 in respect of the *post adjustment* increase for **2005**. An increase of 1.5% is now expected for 2005. Consequently a *downwards adjustment* of 0.2% is appropriate for 2006.

(c) Based on the most recent information supplied by the ICSC, an increase in post adjustment equivalent to an overall increase of 2.0% is forecast for **2006**.

27. In the case of **General Service** (GS) staff salaries, pay developments and projections for the same three years (2004–2006) are also taken into account but based on the Consumer Price Index (CPI) in Austria and the "Tariflohn" (the Austrian minimum salary scale adjustment factor). An increase of 1.8% over the 2005 budget has been applied in the price adjustment based on the net sum of the factors listed in (a)–(c) below:

(a) For 2004, an increase of 1.6% was assumed in the 2005 budget; the actual increase was around 1.66%, requiring a net upwards adjustment of 0.06% for that year.

(b) In the absence of definite data at the time concerning 2005, a pro rata increase of 1.2% in GS salaries from 1 April was assumed (which was a reasonable prediction based on experience); an increase of 1.6% is now expected, requiring a net upward adjustment of 0.4% for that year.

(c) For 2006, no forecast is yet available and an increase of 1.3% is assumed (1.7% pro rated from 1 April 2006).

Common Staff Costs (CSC)

28. The heading CSC includes a range of items:

Pensions — Agency share of pension contributions on behalf of Professional and General Service staff;
Insurance — Agency contribution towards health, accident and unemployment insurance of Professional and General Service staff;
Allowances — dependency, end of service, housing;
Grants — assignment, repatriation, education;
Travel — recruitment, repatriation, home leave;
Removal of Household Effects — recruitment, repatriation, education;
Commutation of Accrued Annual Leave — Professional and General Service staff;
Other Common Staff Costs — maternity and sick leave replacements, language training.

29. For some years, the amounts budgeted for CSC have proved insufficient to cover actual costs. An increase in the CSC percentage (of salary costs) from 39.6% to 41.8% was therefore proposed and approved in 2004 for 2005[3]. It was indicated in the Budget Update for 2005 (GC(48)/2) that the Secretariat would "continue to review the adequacy of the increased percentage … in connection with the preparation of the budget for the next biennium".

30. Experience shows that CSC have been increasing on average over $2 million per year over the period 1996–2004. The actual figures for 2004, now available, indicate that CSC for that year were approximately $2.2 million short of actual requirements (at the budget rate of exchange). While the increase of $3.9 million for 2005 should be sufficient for that year, the steadily increasing trend suggests that it would be prudent to budget for a further €2 million for 2006. On this basis, the CSC percentage has been increased to 45.1%.

31. Including the increase in the CSC percentage would entail an increase in the overall price adjustment. However, it is proposed instead to offset the necessary additional resources for CSC by increasing the lapse factor used in the estimation of salary requirements. The adequacy of both the

[3] As a result of the change in the budget rate of exchange from €0.9229 = $1.00, to €1.00 = $1.00, this percentage would become 43.2% for 2006 without any change in budgetary amount yielded.

CSC percentage and the impact of the increased lapse factor will be reviewed for 2007 when the budget update document for that year is being prepared to identify any need for further action.

Other items of expenditure

32. For items of expenditure other than staff costs, the actual increases experienced in 2004 and actual increases expected during the budget year are used to calculate the price increase for 2006. The increases which have been so applied are as follows:

(a) For *staff travel* and *non-staff travel*, a review of the relevant price movements suggests that price increases of 2.3% and 4.2% respectively, are required.

(b) Since 1991, UNOV has provided *interpretation services* to the Agency, which is charged with actual costs. The most recent data concerning charges for interpretation services indicate that *no increase* for these services is necessary for 2005.

(c) There has been no change in ceiling rates for *hospitality*, but an increase of 2.6% in *representation allowance*, based on movements in the Austrian Consumer Price Index, will result in a net increase of 0.6% in representation and hospitality combined.

(d) For *training*, based on Professional salary adjustments (as outlined above) and increases in fees payable as shown by a relevant Austrian index ("courses for vocational advanced training"), an increase of 0.8% would be appropriate.

(e) For *equipment (leased or rented* and *purchased)* and *supplies and materials*, actual price movements indicate that increases of 2.8%, 2.6% and 3.6% respectively are appropriate.

(f) Based on a comparison of the average cost per *research contract* in 2004 with that for 2003 an increase of 3.9% is called for under this heading.

(g) *General operating expenses* consist of VIC common services, rental and maintenance of premises, communications, utilities and related services, freight, storage, and transportation and maintenance of equipment. Increases for the constituent items are calculated separately based on information obtained internally and from UNIDO, together with various published indices and actual tariffs which are weighted according to actual expenditure on each item. A weighted inflation factor of 2.4% is, therefore, appropriate based on the price adjustments in the different areas concerned.

(h) The item of expenditure *contracts* includes contractual consultant services, sample analytical services, and external editing and translation. Various indices are used, e.g. the external wage index. The weighted average increase resulting from a review of the various indices used is 1.8%.

(i) The heading *miscellaneous* comprises a wide variety of elements including the Agency's contribution to the Abdus Salam International Centre for Theoretical Physics (ICTP) at Trieste, Italy, membership fees, films, photos, copyright and advertisements. Price adjustments are based on individual items and in the case of ICTP, the Italian CPI. The adjustments for the individual items translates into an overall weighted average increase of 2.0% for this heading.

(j) The price adjustment added to the special appropriation for security is 1.3%.

PROGRAMME AND RESOURCE HIGHLIGHTS

Major Programme 1: Nuclear Power, Fuel Cycle and Nuclear Science

33. Major Programme 1 provides core scientific and technological support to interested Member States in the fields of nuclear power, nuclear fuel cycle and materials technologies, capacity building and nuclear knowledge maintenance for sustainable energy development, and nuclear science.

34. In Programme A (Nuclear Power), a new subprogramme on "Support for Non-Electric Applications of Nuclear Power" has been established. It includes the project on nuclear desalination and a project on nuclear hydrogen production, which in the previous cycle was only an activity. A separate project (A.4.04) on issues for small and medium sized reactors has been established for activities that were previously included under Subprogramme A.3. The new Subprogramme A.3 is solely devoted to activities of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) to facilitate collaboration among interested Member States, provide increased attention to cross-cutting issues, and increase interaction with the Generation IV International Forum. In Programme B (Nuclear Fuel Cycle and Materials Technologies), Subprogramme B.1, renamed "Information and Analysis of the Nuclear Fuel Cycle and Materials Management", will focus on improving the efficiency of the Agency's information platforms and networks related to nuclear fuel cycles and nuclear materials management.

35. With the transfer of Library and Information Support from Major Programme 5 to Major Programme 1, a fifth subprogramme, C.5, with that title has been established in Programme C (Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development). There are no structural changes to Programme D (Nuclear Science).

36. The most notable activities from the previous cycle that have been **phased out/completed** are:

Programme A

- Development of strategies for optimizing operating and maintenance costs.
- Guidance on nuclear power plant outage management.
- Development of residual life assessment methodology of reactor pressure vessels in nuclear power plants (NPPs).
- Authorization methods for nuclear power plant control room operators.

Programme B

- Promotion of best practices in uranium production to support sustainability and minimize environmental impacts.
- Activities related to water chemistry and corrosion control in conventional fuel assemblies in the primary circuit, including conventional zirconium based alloys.
- Activities related to quality control of water reactor fuels.

Programme C

- Seminar on sustainable energy issues for senior policy makers.
- Workshop on training trainers for Agency energy models.

Programme D

- Corrosion studies of aluminium clad research reactor fuel in water.
- Development of alpha particle spectrometry instrumentation, methods and applications.
- Updating and distribution of software for gamma ray and X ray spectrometry.

37. The main **new activities** or projects are:

Programme A

- Development of methods for main component replacement, i.e. steam generator, reactor vessel head, reactor internals in NPPs.
- Development of guidelines on water chemistry and corrosion control for secondary side of WWERs.
- Development of guidelines and technical bases for hybrid main control room in NPPs.
- Expansion of activities on non-electric applications of nuclear power activities to include hydrogen production.

Programme B

- Analysis of primary and secondary sources of uranium and thorium raw materials for fuel cycle activities — supply and demand scenario of raw materials from a medium and long term fuel cycle and energy perspective.
- Activities related to in-pile behaviour of advanced fuel assemblies, including advanced zirconium alloys.
- In-depth coverage of management and technological issues associated with long term storage of spent fuel.
- Activities related to advanced fuels for innovative reactors.

Programme C

- Tele-support expert service for applications of the Agency’s energy models.
- Pilot project for distance learning/training on energy models and analysis.
- Development of knowledge packages and expert reviews for nuclear knowledge management.

Programme D

- Promoting regional and international solutions to the back-end of the research reactor fuel cycle and international collaboration to assess projected needs.
- Support to development of low enriched uranium targets for Mo-99 production to replace high enriched targets currently in use.
- Utilization of pulsed neutron beam from low–medium energy spallation sources and support to synchrotron light sources.

38. As it was recognized in the 2002–2003 programme performance review that a number of key emerging issues in the spent fuel area have significant non-technical components, a new activity on

providing guidance on good communication practices at nuclear fuel cycle facilities is planned to start in 2006 (B.1.02/9) in order to address any public concern related to the back end of the fuel cycle. Another lesson learned from the 2002–2003 performance review is that feedback from end-users on services/support (e.g. energy models and tools) is not automatic and yet this feedback is important for performance assessment and for continuous improvement of models to meet current needs of Member States. In 2006–2007, feedback will be sought through review meetings with experts from Member States and through analysis of responses to a questionnaire distributed to users of Agency models, tools and publications. It should be noted that performance indicators in Programme A were thoroughly reviewed in a way to have them focused on the specific components for which the Agency's contribution could be measured.

39. The regular budget resources (prior to price adjustment) proposed for Major Programme 1 correspond to the envelope figures according to the 'Package Proposal', namely €26 276 000 in 2006 and €26 361 000 in 2007, which represent an increase of €102 000 in 2006 compared with 2005 and a further €85 000 in 2007 when compared with the budget for 2006. The net increase in Programme A, amounting to €53 000 in 2006 and 2007 compared with 2005, is mainly due to the new project on nuclear hydrogen generation in the new Subprogramme A.5 and to an increase in Subprogramme A.3 (Coordination of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)). Programme B shows a decrease of €48 800 in 2006, resulting from the phasing out of activities relating to best practices in uranium production to support sustainability and minimize environmental impacts. The increase of €85 000 foreseen in the 'Package Proposal' for Programme C in 2007 is used to give further emphasis to activities foreseen in the area of nuclear knowledge management. The increase of €97 800 for 2006 in Programme D adds resources to research reactor modernization and innovation, and research reactor fuel cycle issues**.**

Major Programme 2: Nuclear Techniques for Development and Environmental Protection

40. Major Programme 2 provides the core scientific and technical support to Member States for non-power-generation applications and is of particular relevance to those Member States that do not depend on nuclear power to meet their energy requirements. It continues work in key areas identified by the 2002 World Summit on Sustainable Development (WSSD), which had already formed the basis of the 2004–2005 biennium programme. The priorities of the major programme are designed to strengthen the utilization of nuclear and isotopic techniques in furtherance of the Millennium Development Goals and the priority areas set by the WSSD.

41. The major programme comprises five programmes as in the 2004–2005 biennium, but there has been a substantial reformulation and refocusing of Programme F (Human Health) and Programme H, which has been given the new title "Assessment and Management of Marine and Terrestrial Environments" in order to better reflect the substance of its activities. The programme on human health has shifted from the current, discipline based, structure, which does not encourage common goals between medical specialties, to a more thematic structure. Programme H has a new Subprogramme H.5 ("Assessment in Support of Sustainable Management of the Terrestrial Environment").

42. Increasing recognition is given in the major programme to the interdependence of the constituent programmes and subprogrammes, and the need to take holistic approaches where relevant. Opportunities are taken to develop cross-cutting projects and research in these and other areas as appropriate.

43. The most notable activities from the previous cycle that have been **phased out/completed** are:

Programme E

- Support for work on nitrogen fixation by legumes, phosphorus use efficiency in crops, plant tissue culture and radioimmunoassay methods in animal reproduction.

Programme F

- Activities focusing mainly on air pollution monitoring.

Programme G

- The projects on the development and transfer of isotope methodologies for groundwater management, assistance to Member States for development and management of geothermal resources, development of analytical tools for dam leakage and reservoir sedimentation, and exchange of information and training in isotope hydrology.
- The projects on collection and use of isotope data for precipitation and runoff, and strengthening Member State capability for isotope measurements.

Programme H

- Development of methods for low level radionuclide concentrations in the environment in response to emergencies.
- Studies of natural radioactivity inputs from coastal geothermal sources.
- The former Subprogramme H.3 (Monitoring and Study of Non-Radioactive Marine Pollution).

Programme I

- Development of sources (Pd-103, I-125 and Ir-192) for brachytherapy.
- Development and validation of speciation analysis using nuclear analytical techniques.
- Development of immunoassays for non-clinical applications.
- Comparative laboratory evaluation of therapeutic radiopharmaceuticals based on somatostatin analogue peptides.
- The activity on radiation synthesis of stimuli-responsive membranes, hydrogels and absorbents for separation purposes.

44. The main **new activities** or projects are as follows:

Programme E

- Two new projects in Subprogramme E.1 (Sustainable Intensification of Crop Production Systems): on “Sterile insect technique and other nuclear based biological control methods to manage risks to agriculture and the environment from exotic insect plant pests” and on “Technologies and practices for efficient agricultural water use and conservation”.
- Project E.2.04 (Strengthening expertise and capacities to integrate SIT in areawide integrated pest management (IPM) approaches against selected tsetse and screwworm populations), which has been redesigned, and the Agency’s tsetse activities, which have been extended until 2011.

Programme F

- A new project "Application of positron emission tomography (PET) in molecular imaging," to expand the imaging aspects of the subprogramme.
- Activities on radiation oncology and cancer treatment (Subprogramme F.3) have been expanded to reflect the growing importance of cancer radiotherapy in Member States.

Programme G

- One new project, G.1.03 (Development of isotope methodologies for water quality assessment and management), will be initiated to focus on isotope applications for water quality assessment and monitoring. Isotope applications for groundwater sustainability assessment will be strengthened with new activities particularly aiming to develop tools for improved irrigation water use and efficiency.
- A new project, G.2.01 (Development of Member State capacity for isotope analysis of hydrological samples), will focus on building capacity for high quality isotope analysis in a network of laboratories.

Programme H

- Subprogramme H.1 (Marine Environmental and Radiological Assessment) diversifies the assessment and quality management components and expands the radiotracer and isotopic investigations of marine pollution.
- Projects H.2.03 (Radiotracing HAB toxins and contaminants in seafood) and H.3.01 (Isotopic studies of nutrient dynamics and algal blooms) expand into activities for combatting harmful algal blooms.
- Marine carbon isotope projects have been regrouped into a new Subprogramme H.3 on "Ocean Climate Coupling and Carbon Cycling". This will also include a new initiative using stable isotope (N-15 and C-13) techniques to track and diagnose the impacts of increasing amounts of fertilizer and sewage derived nutrients carried by rivers to the coastal marine environment.
- Subprogramme H.4, which supports quality in the analysis of terrestrial environmental samples, has been created by integrating projects from former I.1, F.4 and H.4.

45. Review of the 2002–2003 programme and budget performance identified that outcomes, especially in human health and food and agriculture, were often not readily apparent within the project lifetime or soon after. Greater attention has therefore been given to the formulation of outcomes during the cycle, recognizing that they may be of an intermediate nature. The review also identified the need to assist recipient institutions better respond to the resolution of discrepancies found in dosimetry audits. The response has been to initiate Quality Assurance Team for Radiotherapy (QUATRO) missions in Project F.4.01 (replacing the Medical Physics Investigation Teams) to assist Member States in assessing the entire radiotherapy process, thereby strengthening their quality assurance programmes. The need was recognized to complement environmental monitoring activities with environmental assessment and management activities, introducing radioecology and radio-ecotoxicology into the environment programme. Increasing the synergies between the food and agriculture and water resources programmes, agriculture being one of the larger consumers of fresh water and thus where efficiency gains would have greatest impact, was recognized and reflected in Subprogramme E.1. Recognition of the need to better quantify the socio-economic impact of nuclear applications has led to the initiation of some studies in Project I.1.01 in the 2004–2005 cycle and

consideration of this topic by the Standing Advisory Group on Nuclear Applications. The studies will continue through the 2006–2007 cycle and beyond.

46. The regular budget resources (prior to price adjustment) proposed for Major Programme 2 amount to €29 935 000 for 2006 and €30 042 000 for 2007. These figures represent increases of €308 000 in 2006 compared with 2005 and a further €107 000 in 2007 compared with 2006. The increases are as envisaged in the 'Package Proposal' envelope and represent the budgetary requirement for the phasing in of programme activities deferred in accordance with this proposal.

47. Within the major programme, however, there has been a redistribution of resources affecting four programmes responding to new challenges and needs. In the case of Programme F (Human Health), resources have been reduced by a net €310 300 in 2006, made possible by the completion of refurbishment of the sterile insect technique (SIT) malaria laboratory and construction work on the shielded irradiation room, both at Seibersdorf. Most of the former funds earmarked for construction work, however, were retained in the programme to increase support for the Programme of Action for Cancer Therapy (PACT), for staff and equipment for the shielded irradiation room (cobalt and X ray source) operations (€200 000) and for the SIT malaria laboratory running costs (€50 000). Resources increase again by €35 000 in 2007 compared with 2006.

48. Programme G (Water Resources) shows an increase of €105 400 in 2006 and a further €9 500 in 2007, which represents funding for interface work between the water and agriculture programmes. In Programme H (Assessment and Management of Marine and Terrestrial Environments) there has been an overall increase in 2006 of €488 000 made up of €164 700 (5.1% increase) for the marine subprogrammes (H.1, H.2 and H.3) mainly for harmful algal blooms (HABs) and €323 300 (24.8% increase) for the terrestrial subprogrammes (H.4 and H.5). Resources for 2007 increased by further €38 000 over 2006.

49. Reflecting these and other transfers, Laboratory funding shows an increase of €907 200, comprising mainly €323 300 for Subprogrammes H.4 and H.5, €92 400 for Programme E, €133 400 for Programme F, and €370 000 for Programme N (Safeguards), on whose behalf programme activities will be carried out by the Laboratory.

Major Programme 3: Nuclear Safety and Security

50. This major programme deals with all aspects of the protection of people and the environment from effects of ionizing radiation and any nuclear terrorist threat, the minimization of the likelihood of accidents and effective mitigation of the effects of any such events should they occur.

51. In addition to the four programmes that constituted this major programme in the 2004–2005 biennium (Safety of Nuclear Installations, Radiation and Transport Safety, Management of Radioactive Waste, Nuclear Security), a new programme with only one subprogramme entitled "Incident and Emergency Preparedness and Response" has been established. This subprogramme, independent from the other programmes, has been established because of the necessity of having a unified response system for incidents and emergencies involving nuclear facilities, or nuclear or radioactive material.

52. In Programme J (Safety of Nuclear Installations), the number of subprogrammes has been reduced from eight to six by combining the previous Subprogrammes J.4 and J.5 into the new Subprogramme J.4 (Design Safety and Site Evaluation) and previous Subprogrammes J.7 and J.8 into the new Subprogramme J.6 (Safety of Research Reactors and Fuel Cycle Facilities).

53. Similarly, the number of subprogrammes in Programme K (Radiation and Transport Safety) has been reduced from eight to six. This reduction is due to the establishment of an independent subprogramme on "Incident and Emergency Preparedness and Response" and to the merger into one subprogramme of two previous subprogrammes dealing with occupational radiation protection and the application of safety standards to the Agency's own operations.

54. In Programme L (Management of Radioactive Waste), the number of subprogrammes has been reduced from eight to four. This reduction has been achieved mainly through merging the former Subprogrammes L.1 and L.2 into the new Subprogramme L.1 (Development of Waste Safety Standards, Servicing the Joint Convention and Fostering Information and Communication Networks), the former Subprogrammes L.3, L.4 and L.8 into the new Subprogramme L.2 (Disposable Waste: Management of Radioactive Waste and Disused Sealed Sources) and the former Subprogrammes L.6 and L.7 into the new Subprogramme L.4 (Residual Waste: Decommissioning of Installations and Remediation of Sites).

55. The main lesson learned from the 2002–2003 performance review was the need to facilitate programme performance reporting by making the programme more compact and uniform. The number of subprogrammes and projects in Programmes J and K therefore has been reduced. Special emphasis was given to the uniformity of project titles as well as the descriptions of activities. In addition, an attempt was made to improve the overall efficiency of the implementation work by streamlining the internal processes and flattening the management structure. One issue highlighted in the 2002–2003 programme performance assessment was the need to further harmonize the management of the safety and technology activities in Programme L. The number of subprogrammes has been significantly reduced by ensuring that each thematic area — radioactive waste disposal, dischargeable waste, and residual waste, as well as the development of safety standards, servicing the Joint Convention, and fostering information and communication networks — is covered in only one subprogramme which comprises projects related to safety and to technology. It is anticipated that this will facilitate the management of these activities, and hence also the reporting.

56. The design of outcomes and performance indicators still represents a major challenge. For several activities, there was no means in the 2002–2003 programme for following up on the outcomes of safety services. For this reason, in 2006–2007 follow-up missions to Nuclear Safety Review Services are planned to be made obligatory. Furthermore, because of the difficulty of measuring the actual use of safety standards in the Member States, outcomes and performance indicators for the safety standards of nuclear installations were reformulated to make them measurable and were also organized in similar cut sets throughout the programme. In general, the 2006–2007 performance indicators were formulated in a way to reflect achievements anticipated either for the end of one year of the programme cycle or for the complete biennium. Care has been taken in the 2006–2007 Programme K to avoid outcomes which were too ambitious in relation to the length of time needed to turn the Agency's outputs into outcomes in Member States.

57. There has been no change in the number of subprogrammes in Programme M (Nuclear Security). The content of the three subprogrammes has, however, been made more coherent than in the previous biennium as they now address, respectively: assessing nuclear security needs, threat analysis and coordination; preventing malicious activities; and detecting and responding to malicious activities. The number of projects has been reduced from 13 to 9.

58. The most notable activities from the previous cycle that have been **phased out/completed** are:

Programme J

- Former Project J.2.02 "Promoting integrated safety evaluation" (replaced by a project "Promoting the integrated safety approach").

- For the most typical existing NPPs, the guidance documents for the performance of accident analysis completed under former Project J.3.01 (Assisting in the use of advanced safety analysis tools).
- Former Project J.3.03, "Strengthening quality assurance in the safety of nuclear installations".
- Former Project J.6.03, "Strengthening management of safety and safety culture", has been discontinued as a stand-alone project (but the topic was integrated into J.2.02 (Promoting the integrated safety approach)).

Programme L

- Former Project L.3.01 (Elaborating an internationally harmonized approach for removing radioactive waste from the regulatory system) — as the main goal was achieved by the publication of the Safety Guide on the Application of the Concepts of Exclusion, Exemption and Clearance.

59. The main **new activities** or projects are:

Programme J

- The collection and dissemination of information to Member States through the Incident Reporting System (IRS) for fuel cycle facilities in cooperation with the OECD/NEA, included in Project J.1.02 as a new activity.
- A review service focused on long term operation, based on a Safety Guide that will be published by 2006 (Project J.4.02).

Programme K

- Promoting effective and sustainable regulatory infrastructures (Project K.2.01).

Programme L

- Addressing the radiological protection of non-human biota (Subprogramme L.3).

60. The regular budget resources (prior to price adjustment) proposed for Major Programme 3 correspond to the envelope figures in the 'Package Proposal' and amount to €22 047 000 in 2006 and €22 094 000 in 2007, representing an increase of €149 000 in 2006 compared with the adjusted budget for 2005 and a further increase of €47 000 in 2007 when compared with 2006. The increases result mainly from strengthening the incident and emergency preparedness and response area (Subprogramme X), i.e. €57 300 (2006) and €28 500 (2007). Programme J (Safety of Nuclear Installations) shows an increase of €37 500 resulting from the allocations of increased resources to Subprogrammes J.2 and J.4, offset by decreases in other areas. The resources in the remaining programmes within Major Programme 3 remain unchanged or with less significant modifications in 2006 and 2007 compared with 2005.

Major Programme 4: Nuclear Verification

61. Major Programme 4 relates to the Agency's statutory mandate to establish and administer safeguards. In addition, the Agency is supporting under this major programme efforts of the international community in connection with nuclear arms control and reduction. Verification and monitoring activities in Iraq mandated by United Nations Security Council resolutions are also

included under this major programme but are managed by the Iraq Nuclear Verification Office (INVO).

62. During the two previous programme and budget cycles, revelations about the existence of covert nuclear programmes have called attention to important new challenges to the nuclear non-proliferation regime; they also underlined the Agency's responsibility to quickly respond to any such challenges.

63. Consequently, in addition to its established goals, the safeguards programme under Major Programme 4 aims at enabling the Agency to take effective and efficient actions when facing new challenges and to anticipate future requirements related to the nuclear non-proliferation regime:

- The Agency aims at having additional protocols to safeguards agreements in force in all States as well as comprehensive safeguards agreements in all non-nuclear-weapon States that are party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and/or to similar non-proliferation undertakings. It will therefore continue its outreach and promotion and assistance efforts with regard to the conclusion and implementation of additional protocols and safeguards agreements under Project N.2.12 (Negotiation and promotion of comprehensive safeguards agreements, additional protocols and subsidiary arrangements).

- The scope of States' cooperation with regard to the provision of information, in particular information related to imports and exports of relevant nuclear and non-nuclear material and equipment, has an essential impact on the Agency's capability to detect undeclared nuclear activities and to assist in the uncovering of clandestine nuclear trade networks. Under the established Project N.1.06 (State evaluation), new, additional activities will be carried out related to the analysis of such information made available to the Agency.

- The Agency has adapted to the changes in the nuclear non-proliferation environment, i.e. the availability of proliferation sensitive information, the accessibility to sensitive nuclear equipment and technology, and the existence of increasingly advanced and complex nuclear programmes. In particular, it has shifted its focus towards the State as a whole when drawing safeguards conclusions. Safeguards approaches for entire States will be the basis for the implementation of safeguards and for subsequent reporting.

64. The implementation of integrated safeguards is a major instrument for achieving greater efficiency and therefore it will remain a priority. In addition, the above-mentioned and other challenges to the safeguards regime demand the further reinforcement of safeguards effectiveness. Consequently, the implementation of safeguards strengthening measures has been given equal priority in the formulation of the 2006–2007 programme and budget. Furthermore, the Agency will enhance its assistance in improving the capabilities of State systems of accounting for and control of nuclear material (SSACs), where appropriate and requested, under the related Project N.2.15.

65. Based on the lessons learned from the 2002–2003 performance assessment, the Agency is strengthening its implementation of Design Information Verification and pursuing the implementation of voluntary reporting schemes, where applicable, more vigorously under Projects N.1.01–1.04. The Agency is also enhancing its capabilities to detect undeclared nuclear material and equipment through the acquisition of more effective and improved information collection, analysis and evaluation tools, and the enhancement of in-house capabilities for open source information analysis, including satellite imagery under the project on Information support for strengthened safeguards (N.2.13). Furthermore, activities related to the acquisition, development and implementation of more effective and improved detection equipment will be intensified under the project on Development of safeguards instrumentation (N.2.01).

66. A number of activities will continue to have a significant impact on resources, such as the evaluation of States' nuclear programmes. In particular, the implementation of additional protocols in new States, including some with large nuclear fuel cycles, will require considerable resources for the verification, analysis and evaluation of their initial declarations carried out under Project N.1.02 (Verification in States with comprehensive safeguards agreements and an additional protocol in force).

67. In addition, a number of large, unique safeguards projects will affect resource distribution, such as the (delayed) beginning of the Chernobyl conditioning facility project under Project N.2.11 (Development and implementation of safeguards approaches for Chernobyl NPP) and the implementation of the large project "IAEA Safeguards Information System (ISIS) re-engineering" (N.2.14), which is aimed at replacing the outdated information system and anticipated to last three to four years. In addition, resource intensive verification activities at the Rokkasho Reprocessing Plant are currently foreseen for 2006 when the operation of this plant is expected to start. These verification activities will be carried out under Project N.1.02; all development activities have been performed under Project N.2.09 during the previous programme and budget cycle.

68. The regular budget resources (prior to price adjustment) proposed for Major Programme 4 amount to €105 214 000 in 2006 and €106 994 000 in 2007, representing increases of €3 141 000 for 2006 and an additional €1 780 000 for 2007 compared with 2006. These increases are in line with the Major Programme 4 budgetary envelope as set out in the 'Package Proposal'. The main components of the increased regular budget relate to staff costs, equipment and contracts.

69. The extrabudgetary funding envisaged is mostly for financing part of the costs of the ISIS re-engineering project, activities under Project N.1.04 (Verification in States with voluntary offer agreements), safeguards equipment, and a number of cost-free experts and consultants who are fulfilling tasks requiring specific skills for a limited period of time.

70. CAURBs for which no extrabudgetary funding is foreseen are included, as in the prior biennium, only for activities of a more unpredictable or non-recurring nature: additional verification activities in the Democratic People's Republic of Korea, the transfer of verification activities from Euratom, the verification of a reprocessing campaign in India, and the installation of security doors at Headquarters. They are included in order to bring to the attention of Member States possible events during the biennium that may require additional resources.

Major Programme 5: Information Support Services

71. This major programme is concerned with the management and interchange of information, within the Secretariat, and between the Secretariat and Member States, the media and the general public.

72. One of the challenges and opportunities in the forthcoming biennium will again be to capitalize on the Agency's higher media profile and increased international standing. There is likely to be a greater demand for multimedia public information materials. The data obtained from a public opinion survey in some 40 countries will be used as a basis for adjusting the communication strategy.

73. Further integration and consolidation of information and telecommunication technologies will continue. However, the challenge will be to improve access while at the same time enhancing information security without incurring high costs.

74. The review of the 2002–2003 Major Programme 5 performance indicated that media and public outreach on the existing scale could not be accommodated within the regular budget alone, yet extrabudgetary contributions could not be counted on for long term planning. Particular casualties of

this lack of predictable funding have been the extension of media activities to languages other than English and systematic analyses of the portrayal of the Agency in the media.

75. Another major challenge will be to secure the funding needed for the development of the Agency's information technology (IT) infrastructure. Hitherto this funding has been accumulated annually for five years under the Equipment Replacement Fund (ERF). However, the funding requirement cannot be met from existing resources and the proposed amount is accordingly included under CAURBs for which no extrabudgetary funding is available. This issue is discussed in detail below (see paragraphs 104 and 105).

76. The structure of Major Programme 5 shows a number of changes compared with 2004–2005. The principal change is the transfer of the library service, formerly Programme R, to Major Programme 1. In addition, Programme S has been substantially simplified, to comprise only one subprogramme and five projects. This simplification reflects the trend started in the 2004–2005 biennium to merge interrelated activities in order to achieve more efficiency in programme delivery.

77. The regular budget estimates (prior to price adjustment) for Major Programme 5 amount to €15 808 000 for 2006 and remain the same for 2007. These figures are at the same level as the 2005 adjusted budget and are in line with the resources level envisaged in the 'Package Proposal' when account is taken of the transfer of Programme R to Major Programme 1. Further streamlining of the workflow and organizational structure of services in Publishing and Dissemination in Subprogramme S.1 and in the Shared Service, Printing Services, is expected to produce efficiency gains in the 2006–2007 biennium in the order of €400 000. These resources are used by the major programme in part to adjust and target information contained in the IAEA.org public web site in different languages (€164 000 for the biennium in Programme P (Public Information and Communication)). The balance of the savings (€236 000 for the biennium) have been used to compensate for a decrease in revenue from the VIC-based Organizations to the Printing Services, owing to a reduction in their printing requests. The regular budget resources proposed for the remaining programme for both years will continue at the same level as in 2005.

Major Programme 6: Management of Technical Cooperation for Development

78. This major programme involves regular interaction and cooperation with national authorities in the Member States for the definition of their developmental needs and the identification of appropriate applications of nuclear science and technology that will bring tangible and sustainable benefits. The primary focus of management is continued improvement in the quality of the technical cooperation programme throughout the programming cycle, from the upstream work, through the project design and appraisal stages to project implementation and monitoring.

79. Major Programme 6 aims to adopt a more proactive approach with regard to external communication, fund raising and partnership in order to raise awareness and understanding of the benefits derived from the technical cooperation programme. More focus will be given to the development of Country Programme Frameworks (CPFs) as a process and tool for identifying TC projects. Efforts will be made to strengthen South–South cooperation, and Technical Cooperation among Developing Countries (TCDC) in order to promote self-reliance will also be pursued.

80. In response to the Board of Governors request (in document GOV/2003/48), a review of the processes and assessment of the workload of the Department of Technical Cooperation was undertaken by the Office of Internal Oversight Services (OIOS). Changes to the programme and allocation of resources have been made based on the recommendations which were presented to the Board in document GOV/INF/2004/5.

81. In Subprogramme T.2 (Programme Formulation and Implementation) the management of the TC programme for countries in West Asia — a separate project in the previous biennium — has been consolidated with the management of the programme in Europe and Asia and the Pacific.

82. The shift from a technology driven to a demand driven TC programme has posed great challenges to the TC management, structure and resources. Moreover, an increasing number of Member States are participating in the programme. Under these circumstances, a continuous challenge for Major Programme 6 is to ensure that adequate resources, both human and financial, are available to respond to Member State needs.

83. During the preparation of the programme and budget for 2006–2007, as a follow-up to the lessons learned from the performance review of the 2002–2003 programme and budget, particular attention was paid to the formulation of measurable performance indicators, and to the availability of data from verifiable sources. Adjustments to existing data collection systems were made. The need for new or improved data collection systems, which also capture outcomes, was identified and work in this area is in progress and will continue in the 2006–2007 cycle.

84. The regular budget resources (prior to price adjustment) proposed for Major Programme 6 amount to €15 255 000 for 2006 and 2007, representing an increase of €25 000 compared to 2005, as agreed in the 'Package Proposal'. The additional funding represents the cost of staffing adjustments.

Major Programme 7: Policy and General Management

85. Major Programme 7 is concerned with the leadership, direction and support, under the authority of the Director General, for all Agency activities. Effective coordination is essential for instituting a one-house approach, particularly with respect to overall policies, interactions with Member States, the development of programmes and the evaluation and assessment of performance.

86. A service oriented culture in support activities will continue to be emphasized to meet the needs of customers, including both Member States and Secretariat staff. Interaction with governments, other international organizations and civil society will be strengthened and the scope of such interaction broadened. Particular emphasis will be placed on the coordination of cross-cutting areas identified in the Agency's programmes. Change management practices will be strengthened to draw maximum benefit from new initiatives.

87. This major programme will respond to an increased need for policy and legal support across a wide range of Agency activities, including strengthening safeguards, enhancing nuclear safety, protection against nuclear terrorism, demand from Member States for assistance in the preparation of national legislation, and personnel and general management. Focus will be placed on the re-engineering and/or enhancement of human resources processes, with an increasing number of services made available on-line. The modernization of the United Nations pay and benefits system is also expected to yield first results during the 2006–2007 biennium.

88. Consolidation of the gains achieved from the introduction of results based management will be pursued, in particular through systematic training of all staff involved.

89. The current United Nations System Accounting Standards (UNSAS) do not require full provision to be made for after-service health benefits, but rather merely a disclosure of the amount of the liability, and the Agency complies with this requirement. However, the United Nations Panel of External Auditors has advised the task force on accounting standards in the UN that either UNSAS must be improved, or the alternative International Accounting Standards (IAS) on International Public Sector Accounting Standards (IPSAS) be adopted. This points to an eventual conclusion that in future

full provision be made for this liability and reflected in the accounts of each organization. An appropriate solution to this problem will, therefore, need to be developed in the course of the 2006–2007 biennium.

90. Construction of a new conference facility in the Vienna International Centre (VIC) and the asbestos removal work (both projects of the host Austrian Government), together with rationalization of office space, will be major undertakings during the forthcoming period.

91. The structure of Major Programme 7 remains essentially as in 2004–2005, except for some changes in projects in Subprogramme V.3 (General Services) intended to provide greater transparency and to more accurately describe the scope of the services provided. In particular, the UN Security and Safety Service was established as a separate project, V.3.03, having regard to the increased emphasis on security enhancements.

92. The lessons learned from the 2002–2003 programme performance assessment include the need to streamline the formulation process for the programme and budget. Action in this respect has already been taken and efforts in this regard will continue in the 2006–2007 biennium. Also the need was observed for a performance based information system for collecting, storing, analysing and reporting actual programme results in order to facilitate the performance assessment at the end of the biennium. Such a system is being introduced in 2005 and it will be further refined and put into full use in 2006–2007.

93. The regular budget estimates (prior to price adjustment) for Major Programme 7 amount to €50 423 000 for 2006 and remain the same for 2007. These figures correspond to the resource level envisaged under the 'Package Proposal'. There has, however, been some redistribution of resources between programmes made possible by re-engineering of work processes and related organizational structures of the Agency's travel and financial management operations which has resulted in greater efficiencies in Subprogramme V.1 (Financial Management) and Subprogramme V.3 (General Services) of €329 000 per year. These resources will be used by the major programme (for example, some have been redeployed to Subprogramme V.2 (Human Resources Management)), to cover increased costs for required salary survey support, increases in the Agency's share of UN common system activities and the need to strengthen the Agency's training programme.

Conferences and symposia

94. The conferences and symposia planned for 2006–2007 are set out in the table below.

2006	2007
MAJOR PROGRAMME 1 – NUCLEAR POWER, FUEL CYCLE AND NUCLEAR SCIENCE	
• 21st IAEA Fusion Energy Conference	• Non-electric Applications of Nuclear Power: Seawater Desalination, Hydrogen Production and other Industrial Applications
• Management of Spent Fuel from Nuclear Power Reactors	• Nuclear Power Plant Life Management
MAJOR PROGRAMME 2 – NUCLEAR TECHNIQUES FOR DEVELOPMENT AND ENVIRONMENTAL PROTECTION	
• Improved Agronomic Management Practices for Enhanced Food Security: Recent Advances and Prospects for the Development and Application of Nuclear Techniques as Diagnostic Tools	• Advances in Isotope Hydrology and its Role in Sustainable Water Resource Management
	• Molecular Nuclear Medicine and Radiopharmacology

2006	2007
MAJOR PROGRAMME 3 – NUCLEAR SAFETY AND SECURITY	
• Safe Utilization and Regulation of Technical Support Services in the Nuclear Industry	• Topical Issues in Nuclear Installation Safety
• Lessons Learned from Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities	• Illicit Trafficking
• Senior Regulators' Conference on the Effectiveness of Regulatory Systems	
MAJOR PROGRAMME 4 – NUCLEAR VERIFICATION	
• Addressing Verification Challenges	
CROSS-CUTTING CONFERENCES	
• Quality Assurance and New Techniques in Radiation Medicine	• Research Reactors (Utilization, Modernization, Refurbishment, Safety, Fuel Cycle, Decommissioning and Waste Management)
• Environmental Radioactivity: From Measurement and Assessment to Regulation	• Knowledge Management in Nuclear Facilities

Security Enhancements

95. In connection with the approval by the General Conference (GC(48)/RES/5) of a supplementary appropriation for 2004 to cover the Agency's share of the cost of immediate 'Phase I' security enhancements at the VIC[4] and corresponding requirements for Agency offices and laboratories outside Vienna, it was envisaged that there would be recurring annual costs of $721 000 per year. These costs are not now expected to arise because they have been superseded by Phase II proposals. This is because temporary staff approved under Phase I will be replaced by fixed term staff under Phase II.

96. Proposals for the further Phase II security enhancement measures at the VIC in 2005 formed part of the UN system-wide submission (A/59/365 and Add.1) of 30 September 2004 by the Secretary-General, approved at a reduced level by the General Assembly (A/RES/59/276) in December 2004. The Agency's share of the recurring element of these costs (€2 150 000), plus corresponding costs at Agency offices and laboratories outside Vienna (€280 000), is estimated to be €2.43 million per annum. Cost requirements of this magnitude for enhanced security were not envisaged at the time of the negotiations leading to the "Package Proposal" and, thus, cannot be accommodated within available regular budget resources. It is necessary, therefore, to seek a special appropriation of this amount, above the level of the budget ceiling provided for in the 'Package Proposal', to cover these recurring annual costs. This special appropriation is shown at the foot of Summary Tables 1, 3(a)/3(b) and 4, and included under Section 8 in the draft appropriation resolution in the Annex.

[4] (Reflecting the related decision of the United Nations General Assembly on the Secretary-General's Phase I proposals (A58/756) in June 2004.)

OTHER RESOURCE HIGHLIGHTS

Technical adjustments

97. To facilitate comparison with previous years, the proposed regular budget resource levels for 2006–2007 are stated in real terms, i.e. at 2005 prices. Moreover, in view of the differences between the 2006–2007 programme and that for 2004–2005 as a result of restructuring, it has also been necessary to adjust the approved budget resources for 2005 to show the resource allocations in a manner corresponding to the programme and budget for 2006–2007. For example, an adjustment has been made to reflect the transfer of the Library and Information Support, previously Programme R in Major Programme 5, to Major Programme 1 as Subprogramme C.5.

98. In addition to the programme adjustments described under Programme and Resource Highlights for each of the major programmes, it has been necessary also to make adjustments in the 2005 regular budget figures to reflect budgetary changes made in 2006 and 2007 which are intended to increase transparency or to present more accurately the programmatic costs of the activities concerned. The following technical adjustments have therefore been reflected in the adjusted budget for 2005:

- Financial resources totalling €213 000 have been transferred from Subprogramme V.3 to Subprogramme Q.3, reflecting a consolidation of IT resources in the latter subprogramme.
- A net €46 000 relating to pre-travel activities and invoice control functions have been transferred between Subprogramme V.1 and Subprogramme V.3 arising from the reorganization and rationalization of travel management operations within Major Programme 7.

Human resources

99. Under the results based programming and budgeting approach, efforts have been made to relate programme and resource requirements more directly. The resource demands for 2006–2007 for all programmes were subjected to detailed scrutiny in regard to programme priorities. It is envisaged that resource requirements for established posts will be met within the approved staffing table ceiling of 1804 posts. This figure refers to the fixed-term staffing resources which may be deployed for purposes of implementing Agency programmes.

Efficiency gains

100. The Secretariat continues to explore every avenue to achieve efficiency and effectiveness in delivering its programme. The programme and budget proposals for 2004–2005 envisaged greater efficiencies through a fundamental re-engineering of printing operations. Further streamlining of the workflow and organization in the Shared Service, Printing Services, and in Project S.1.04, Publishing and dissemination — taking advantage of advanced technology and an emphasis on electronic and web publishing — is expected to produce efficiency gains in the 2006–2007 biennium in the order of €400 000. This amount will be used to provide information in different languages on the IAEA.org public web site and to make up for a shortfall in Reimbursable Work for Others funding for printing. Furthermore, in seeking improvements in the effectiveness of the Agency's travel and financial management operations, re-engineering of work processes and related organizational structures has resulted in cost reductions in Subprogramme V.1 (Financial Management) and Subprogramme V.3 (General Services) totalling €329 000 per year. These financial resources will be used to cover increased costs for required salary survey support, increases in the Agency's share of UN common system activities and the need to strengthen the Agency's training programme.

Resource requirements for CAURBs

101. The amounts required for CAURBs for which no extrabudgetary funding is available total €7 897 000 in 2006 and €8 170 000 in 2007. These figures show reductions of over €800 000 and €500 000, respectively, for the two years compared with 2005 (when such CAURBs amounted to €8 705 000 at the new budget rate of exchange of €1.0 = $1.0).

102. In Major Programmes 1, 2 and 3, the reduced CAURB figures reflect the incorporation into the regular budget of activities included in this category in the previous year's budget in line with the phasing envisaged in the 'Package Proposal'.

103. The amounts required for Major Programme 4 (Nuclear Verification) — €3 050 000 and €3 160 000 for 2006 and 2007, respectively — do not differ markedly from the 2005 figure of €3 260 000 and, as in 2005, refer mainly to activities which involve a degree of uncertainty as indicated in paragraph 70.

104. The CAURBs for which no extrabudgetary funding is available in Major Programme 5, specifically for Programme Q (Information and Communications Technology (ICT)), include an increased requirement for funding the annual contribution to the Equipment Replacement Fund (ERF). The ERF mechanism was initiated in 1992 to provide for the cost of modernizing the Agency's IT infrastructure, i.e. such items as cabling, servers and security software. Using this mechanism, funds becoming available from savings have been accumulated over periods of five years and the accumulated resources then made available for updating the Agency wide IT infrastructure.

105. In the strategic issues and changes document (GOV/2004/23), the Secretariat pointed out to the Board that although the ERF 2005 was likely to prove to be just about adequate, the next proposed ERF would need to be funded at a significantly higher level and provide greater flexibility in regard to resources and in the utilization of the Fund. For the ERF 2005, the Board of Governors authorized $2 million or $400 000 per year to be accumulated. It is proposed that the next ERF (ERF 2009) be funded at €1.2 million per year. The funds will be accumulated for four years before being available for use rather than five to synchronize the ERF with the programme biennia. A separate document seeking approval for the creation of the ERF 2009 and outlining the proposed uses of the funds has been submitted to the Board (GOV/2005/22). Unless extrabudgetary contributions are forthcoming, however, the provision of these funds will continue to be dependent on the emergence of the requisite amount from regular programme savings. It is also proposed that such savings would be provided to the extent possible, and with regard to programme priorities generally, from available regular budget mid-biennium savings and carry-over funds from Major Programmes 5 and 7, and from unused funds, if any, at the end of each biennium from any major programme, and from extrabudgetary contributions for this purpose.

106. In Major Programme 7, the CAURBs for which no extrabudgetary funding is available reflect only requirements for various infrastructure developments in the VIC and at offices and laboratories outside Vienna. There may, however, be further buildings management requirements related to increased costs for ancillary work in connection with asbestos removal. These requirements are under discussion with UNIDO and other VIC-based organizations and are not reflected in the relevant table. Every effort will be made to fund any additional costs from programme savings in Major Programme 7.

Extrabudgetary funds

107. Extrabudgetary funding for which commitments have been received is expected to amount to €23 941 000 and €22 244 000, respectively, in 2006 and 2007. The equivalent figure for 2005 is €22 372 000 (the figure in US dollars for that year converted to euro at the budget rate of exchange). The expected funding amounts to 8.8% of the regular budget for Agency programmes in 2006 and around 8.2% in 2007.

108. Other extrabudgetary funding (€15 379 000 in 2006 and €15 354 000 in 2007) is expected from United Nations organizations to support Agency activities. These funds include joint activities carried out with FAO, which form an integral part of the Agency's programme, and the verification and monitoring activities in Iraq under UN Security Council resolutions. The amount of €12 295 000 per year foreseen for the latter reflects the best estimate of the funding requirement to implement a fully operational ongoing monitoring and verification (OMV) system in Iraq. Needless to say, resources of this amount will not be required unless conditions exist that allow the resumption of OMV activities. Taking other extrabudgetary funding into account, total expected extrabudgetary funding amounts to €39 320 000 in 2006 and €37 598 000 in 2007.

Nuclear security plan of activities

109. The Board of Governors in March 2002 approved the establishment of the Nuclear Security Fund and a three year plan of activities for protection against nuclear terrorism (see document GOV/2002/10). As outlined in paragraph 34 of the Agency's Programme and Budget 2004–2005 (GC(47)/3), the implementation process will extend to the end of 2005.

110. As indicated to the Board of Governors and the General Conference in document GOV/2004/50–GC(48)/6, the imperatives that first led the General Conference to request the Director General to develop enhanced measures to combat nuclear terrorism have not diminished and the results of evaluation activities to date point to substantial needs of Member States to enhance their nuclear security measures. Consequently, proposals for a second plan of activities are being drawn up at present and will be presented to the Board of Governors for approval in the second half of 2005. The new plan will take into consideration the outcome of present processes, of the International Conference on Nuclear Security in London in March 2005, as well as other relevant conferences and international meetings. Pending its completion, the annual funding requirement for this plan is shown at €11.4 million per year (the same level as for 2005 at the budget rate of exchange), which will (pending the outcome of the review of this mechanism foreseen in document GOV/2002/10) continue to be funded by voluntary contributions to the Nuclear Security Fund (NSF).

TECHNICAL COOPERATION PROGRAMME

111. The technical cooperation activities of the Agency are financed from the Technical Cooperation Fund (TCF) and extrabudgetary contributions. The TCF is mainly comprised of voluntary contributions, for which a target is recommended each year by the Board of Governors, and National Participation Costs[5] paid by recipient Member States. The target figure for voluntary contributions to the TCF recommended by the Board of Governors for 2006 noted in General Conference resolution GC(48)/RES/7 amounts to $77 500 000; the corresponding indicative planning figure for 2007, as noted in the resolution, "shall not be less than $78 500 000".

[5] Formerly Assessed Programme Costs (APCs).

112. The forecast of the resources required for the technical cooperation programme for 2006 amounts to $87 009 000 and comprises: (a) $71 824 000 for estimated core project funding; (b) $2 100 000 for other activities (miscellaneous and programme reserve); (c) $5 308 000 for the estimated implementation levels of extrabudgetary activities; (d) $350 000 under UNDP projects; and (e) $7 427 000 for government cost sharing contributions[6]. This amount does not constitute a target for or limitation on funds and does not in any way prejudge the technical cooperation programme for 2006. It is too early to make a firm forecast of what the technical cooperation programme for 2007 might be but a tentative estimate would be $87 385 000 based on a slightly increased target for 2007 compared to 2006.

TOTAL BUDGETARY REQUIREMENTS

Regular budget envelopes

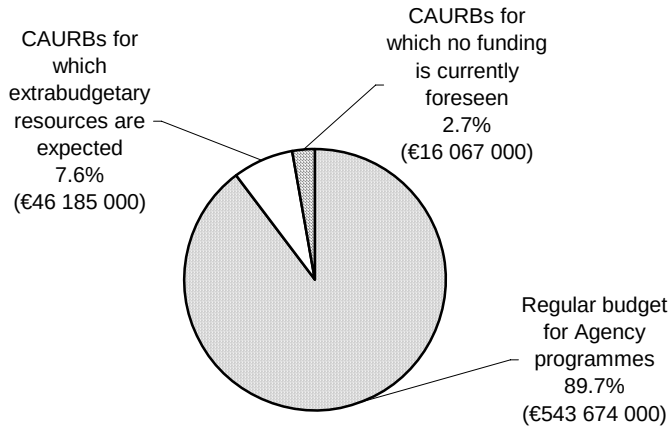
113. The programme and budget proposals contained in this document have, as mentioned above, been formulated on the basis of the 'Package Proposal', in particular, the budget envelopes for each of the major programmes, established by the Board of Governors in July 2003 and subsequently brought to the attention of the 47th General Conference (GC(47)/INF/7). Nevertheless, a proposed addition to the budget envelope has proved unavoidable in the light of the unanticipated need for enhanced security measures at the VIC and other Agency offices and laboratories in the wake of the bombing of the United Nations Headquarters in Baghdad on 9 August 2003. These measures are intended to bring the VIC and other Agency facilities into compliance with mandated UN Headquarters Minimum Operating Security Standards (H-MOSS). The special appropriation of €2.43 million now requested is related to the recurring annual costs of these measures (e.g. salaries of additional UN security officers) for 2006.

114. The total regular budget is estimated at €273 619 000 for 2006 and €275 524 000 for 2007 at 2006 price levels — see Table 1. Of these totals, the resources for Agency programmes for the two years amount to €270 800 000 and €272 874 000, respectively, while the remainder in each case, €2 819 000 for 2006 and €2 650 000 for 2007, is for reimbursable work to be performed by the Agency for others. The amounts shown for this reimbursable work are expected to be offset completely by income from the services provided to the other international organizations or other funds concerned.

115. The chart below summarizes the resource requirement for the total regular programme for the biennium. The total requirement of €605 926 000 contains three elements: (1) the regular budget proposal for Agency Programmes, including the special appropriation for Security Enhancements, after price adjustments — €543 674 000; (2) the CAURBs expected to receive extrabudgetary funding — €46 185 000; and (3) the CAURBs for which no funding is currently foreseen from any source — €16 067 000.

[6] Funds provided by Member States to augment projects in their own country.

Resource Requirements for the Total Regular Programme in 2006–2007

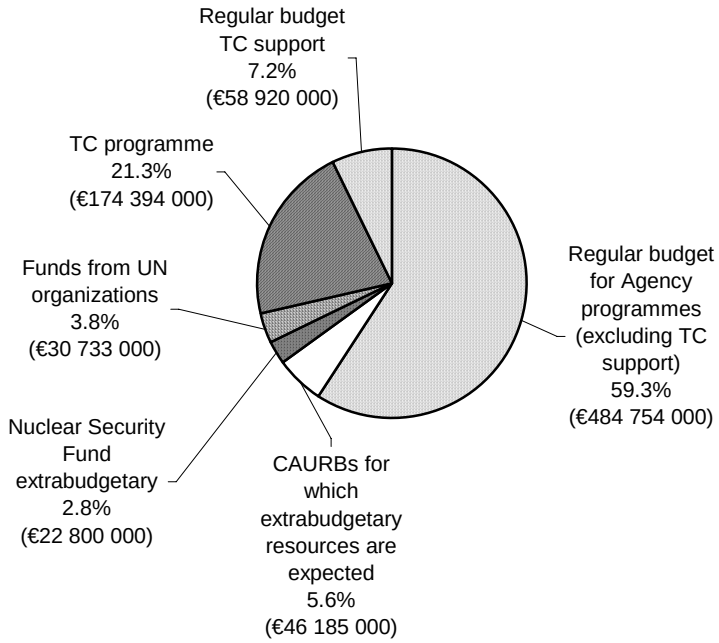


	2006	2007	Total for biennium
Regular budget for Agency programmes	270 800 000	272 874 000	543 674 000
CAURBs for which extrabudgetary resources are expected	23 941 000	22 244 000	46 185 000
CAURBs for which no funding is currently foreseen	7 897 000	8 170 000	16 067 000
Total	302 638 000	303 288 000	605 926 000

116. The above programme funding is supplemented by funds from other United Nations organizations in the amount of €30 733 000, the details of which are set out in Table 3(a)/3(b). The largest component of this funding is that shown for the United Nations for inspection activity in Iraq pursuant to Security Council resolutions.

117. With regard to the overall programme activities of the Agency in the 2006–2007 biennium, the chart and table below illustrate the estimates of resources for implementation from the three major sources of funding available to the Agency — the regular budget, extrabudgetary resources, including the NSF, and estimates of resources for the TC programme. Combined, they represent the total resources the Agency will manage during the two years of the biennium (€817 786 000). The predominant element is the regular budget, accounting for €543 674 000, or 66.5%, of the total. This comprises €484 754 000 for regular programmes and €58 920 000 for the management, scientific and technical support for the TC programme.

Total Resources for all Agency Programmes in 2006–2007 (including the TC programme)



	2006	2007	Total for biennium
Regular budget for Agency programmes (excluding TC support)	241 340 000	243 414 000	484 754 000
Regular budget TC support	29 460 000	29 460 000	58 920 000
Subtotal regular budget:	270 800 000	272 874 000	543 674 000
CAURBs for which extrabudgetary resources are expected	23 941 000	22 244 000	46 185 000
Funds from UN organizations	15 379 000	15 354 000	30 733 000
Nuclear Security Fund extrabudgetary	11 400 000	11 400 000	22 800 000
TC programme	87 009 000	87 385 000	174 394 000
Total	408 529 000	409 257 000	817 786 000

118. The extrabudgetary resources expected for the regular budget programme amount to €76 918 000. The resources for the biennium are divided into two portions representing: (a) CAURBs — 5.6% (already illustrated in the previous pie chart); and (b) the aggregate amount available for extrabudgetary activities supported by other United Nations organizations — 3.8%. A further €22 800 000 is shown as available in extrabudgetary contributions to the NSF for implementation of the plan of activities to protect against nuclear terrorism.

WORKING CAPITAL FUND

119. The 48th General Conference approved a continuation of the Working Capital Fund (WCF) at the $18 000 000 level for 2005. This represents somewhat less than one month's expenditure for the regular budget. No change in this level is proposed for 2006 in Draft Resolution C, The Working Capital Fund in 2006, set out in the Annex to this document. In accordance with the decision of the

Board of Governors on the adoption of the euro as the functional currency for the Regular Budget Fund and the Working Capital Fund from 1 January 2006 (see documents GOV/OR.1086 and GOV/2003/27), however, the WCF will be converted to the equivalent of $18 000 000 as of 1 January 2006 using the euro/US dollar United Nations operational rate of exchange for that date. The conversion will, therefore, be carried out by applying the following formula:

> WCF in euro = $18 000 000/A where A is the US dollar to one euro United Nations operational rate of exchange for 1 January 2006.

120. A low euro value of the US dollar on the changeover date could, however, result in a WCF level which is completely inadequate, bearing in mind that the average monthly requirement according to the proposed regular budget for Agency programmes with price adjustment would be €22.6 million. The position, therefore, will need to be reviewed once the euro level of the WCF is known in January 2006 with a view to proposing any remedial action in the Budget Update for 2007.

REPORT ON THE BUDGET TO THE UNITED NATIONS GENERAL ASSEMBLY

121. In accordance with Article XVI of the Agency's relationship agreement with the United Nations (INFCIRC/11, part I), the budget may be reviewed by the Advisory Committee on Administrative and Budgetary Questions (ACABQ), which would report on the administrative aspects thereof to the United Nations General Assembly.

Table 1. The Regular Budget — by Programme and Major Programme

Programme / Major Programme	2004 actual expenditure	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
1. Nuclear Power, Fuel Cycle and Nuclear Science											
1. Overall management, coordination and common activities	582 598	678 600	-	-	678 600	-	-	678 600	1.1	686 000	685 900
A. Nuclear Power	4 585 913	4 964 600	53 000	1.1	5 017 600	-	-	5 017 600	1.4	5 087 800	5 088 000
B. Nuclear Fuel Cycle and Materials Technologies	2 351 396	2 432 300	(48 800)	(2.0)	2 383 500	-	-	2 383 500	1.2	2 412 100	2 412 100
C. Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development	9 401 947	9 763 300	-	-	9 763 300	85 000	0.9	9 848 300	1.7	9 924 700	10 011 400
D. Nuclear Science	7 859 467	8 335 200	97 800	1.2	8 433 000	-	-	8 433 000	1.6	8 568 400	8 567 600
Major Programme 1	24 781 321	26 174 000	102 000	0.4	26 276 000	85 000	0.3	26 361 000	1.5	26 679 000	26 765 000
2. Nuclear Techniques for Development and Environmental Protection											
2. Overall management, coordination and common activities	701 134	739 600	400	0.1	740 000	(1 000)	(0.1)	739 000	0.9	746 600	745 600
E. Food and Agriculture	11 218 733	11 632 400	-	-	11 632 400	-	-	11 632 400	1.9	11 850 100	11 849 600
F. Human Health	6 381 668	7 790 900	(310 300)	(4.0)	7 480 600	35 000	0.5	7 515 600	1.8	7 614 700	7 650 000
G. Water Resources	3 030 199	3 132 100	105 400	3.4	3 237 500	9 500	0.3	3 247 000	1.3	3 278 200	3 288 300
H. Assessment and Management of Marine and Terrestrial Environments	4 320 140	4 508 000	488 000	10.8	4 996 000	38 000	0.8	5 034 000	1.3	5 060 700	5 099 200
I. Radioisotope Production and Radiation Technology	1 801 094	1 824 000	24 500	1.3	1 848 500	25 500	1.4	1 874 000	2.0	1 885 700	1 911 300
Major Programme 2	27 452 968	29 627 000	308 000	1.0	29 935 000	107 000	0.4	30 042 000	1.7	30 436 000	30 544 000
3. Nuclear Safety and Security											
3. Overall management, coordination and common activities	824 928	926 400	8 000	0.9	934 400	5 000	0.5	939 400	1.3	946 600	951 800
X. Incident and Emergency Preparedness and Response	832 726	847 400	57 300	6.8	904 700	28 500	3.2	933 200	1.0	913 700	943 100
J. Safety of Nuclear Installations	7 334 882	7 956 600	37 500	0.5	7 994 100	21 500	0.3	8 015 600	0.9	8 066 000	8 089 300
K. Radiation and Transport Safety	4 578 534	4 940 400	15 000	0.3	4 955 400	(8 000)	(0.2)	4 947 400	1.1	5 007 900	5 000 300
L. Management of Radioactive Waste	5 470 721	5 922 400	-	-	5 922 400	-	-	5 922 400	1.2	5 993 400	5 996 100
M. Nuclear Security	1 262 271	1 304 800	31 200	2.4	1 336 000	-	-	1 336 000	0.6	1 344 400	1 344 400
Major Programme 3	20 304 062	21 898 000	149 000	0.7	22 047 000	47 000	0.2	22 094 000	1.0	22 272 000	22 325 000
4. Nuclear Verification											
4. Overall management, coordination and common activities	1 014 391	984 100	(5 800)	(0.6)	978 300	-	-	978 300	0.5	983 500	983 500
N. Safeguards	87 246 850	101 088 900	3 146 800	3.1	104 235 700	1 780 000	1.7	106 015 700	1.1	105 352 500	107 179 500
Major Programme 4	88 261 241	102 073 000	3 141 000	3.1	105 214 000	1 780 000	1.7	106 994 000	1.1	106 336 000	108 163 000
5. Information Support Services											
P. Public Information and Communication	2 965 281	3 170 400	54 000	1.7	3 224 400	56 000	1.7	3 280 400	1.2	3 264 700	3 321 700
Q. Information and Communications Technology (ICT)	6 241 769	7 417 200	-	-	7 417 200	-	-	7 417 200	1.0	7 494 600	7 494 600
S. Conference, Translation and Publishing Services	5 048 925	5 220 400	(54 000)	(1.0)	5 166 400	(56 000)	(1.1)	5 110 400	1.3	5 232 700	5 175 700
Major Programme 5	14 255 975	15 808 000	-	-	15 808 000	-	-	15 808 000	1.2	15 992 000	15 992 000
6. Management of Technical Cooperation for Development											
6. Overall management, coordination and common activities	622 555	534 300	-	-	534 300	-	-	534 300	0.7	538 300	538 300
T. Management of Technical Cooperation for Development	13 286 207	14 695 700	25 000	0.2	14 720 700	-	-	14 720 700	0.9	14 857 700	14 857 700
Major Programme 6	13 908 762	15 230 000	25 000	0.2	15 255 000	-	-	15 255 000	0.9	15 396 000	15 396 000
7. Policy and General Management											
U. Executive Management, Policy-Making and Coordination	11 578 962	13 329 000	(37 000)	(0.3)	13 292 000	-	-	13 292 000	0.9	13 411 600	13 411 600
V. Administration and General Services	34 846 683	35 355 800	-	-	35 355 800	-	-	35 355 800	2.0	36 059 500	36 059 500
W. Oversight Services and Performance Assessment	1 592 578	1 738 200	37 000	2.1	1 775 200	-	-	1 775 200	0.7	1 787 900	1 787 900
Major Programme 7	48 018 223	50 423 000	-	-	50 423 000	-	-	50 423 000	1.7	51 259 000	51 259 000
Subtotal	236 982 552	261 233 000	3 725 000	1.4	264 958 000	2 019 000	0.8	266 977 000	1.3	268 370 000	270 444 000
8. Special Appropriation for Security Enhancements a_/	-		2 398 000	-	2 398 000	-	-	2 398 000	1.3	2 430 000	2 430 000
Agency Programmes	236 982 552	261 233 000	6 123 000	2.3	267 356 000	2 019 000	0.8	269 375 000	1.3	270 800 000	272 874 000
Plus: Reimbursable Work for Others	2 137 664	2 726 000	48 000	1.8	2 774 000	(166 000)	(6.0)	2 608 000	1.6	2 819 000	2 650 000
Total Regular Budget	239 120 216	263 959 000	6 171 000	2.3	270 130 000	1 853 000	0.7	271 983 000	1.3	273 619 000	275 524 000
Less Miscellaneous Income:											
Reimbursable Work for Others		2 726 000	48 000	1.8	2 774 000	(166 000)	(6.0)	2 608 000	1.6	2 819 000	2 650 000
Other Miscellaneous Income		2 876 000	126 000	4.4	3 002 000	7 000	0.2	3 009 000	-	3 002 000	3 009 000
Assessment on Member States		258 357 000	5 997 000	2.3	264 354 000	2 012 000	0.8	266 366 000	1.3	267 798 000	269 865 000

a_/ Supplementary Budget Appropriation of €4 453 000 for 2004 approved at the General Conference in that year (GC(48)/RES/5).

Table 2. The Regular Budget - Summary of Income

	2004 actual income	2005 at 2005 prices	Increase (decrease)	2006 at 2006 prices	Increase (decrease)	2007 at 2006 prices
Assessed contributions on Member States	246 116 090	258 357 000	9 441 000	267 798 000	2 067 000	269 865 000
Miscellaneous income						
(a) Reimbursable work for others						
Data processing services	234 115	-	-	-	-	-
Printing services	754 608	1 237 600	26 400	1 264 000	(169 000)	1 095 000
Medical services	680 283	767 400	10 900	778 300	-	778 300
Radiation protection and monitoring services	95 562	99 200	1 400	100 600	-	100 600
Translation services	43 811	214 500	1 600	216 100	-	216 100
Nuclear Fusion Journal	130 227	147 300	2 700	150 000	-	150 000
Laboratory services	199 058	200 000	50 000	250 000	-	250 000
Marine Environment Laboratory services	-	60 000	-	60 000	-	60 000
Subtotal Reimbursable work for others	2 137 664	2 726 000	93 000	2 819 000	(169 000)	2 650 000
(b) Other						
Attributable to specific programmes						
INIS Products	49 253	51 700	(16 700)	35 000	-	35 000
Publications of the Agency - other	309 645	392 300	(42 300)	350 000	-	350 000
Laboratory income	195 150	220 000	20 000	240 000	-	240 000
Amounts recoverable under Safeguards agreements	502 926	500 000	(85 000)	415 000	7 000	422 000
Programme support income	38 852	20 000	20 000	40 000	-	40 000
Other Service income	3 200	2 000	-	2 000	-	2 000
	1 099 026	1 186 000	(104 000)	1 082 000	7 000	1 089 000
Not attributable to specific programmes						
Investment and interest income	1 459 748	1 172 200	227 800	1 400 000	-	1 400 000
Gain (Loss) on exchange of currencies	357 437	-	-	-	-	-
Other	613 842	517 800	2 200	520 000	-	520 000
	2 431 027	1 690 000	230 000	1 920 000	-	1 920 000
Subtotal Other	3 530 053	2 876 000	126 000	3 002 000	7 000	3 009 000
Total Miscellaneous Income	5 667 717	5 602 000	219 000	5 821 000	(162 000)	5 659 000
Total	251 783 807	263 959 000	9 660 000	273 619 000	1 905 000	275 524 000

Table 3(a). Total Resource Requirements for 2006 by Programme and Major Programme

Programme / Major Programme	Regular Budget 2006 estimates at 2006 prices	Funds a_/ from UN organizations	CAURBs b_/ Extrabudgetary	NSF	TC Programme c_/	Total	CAURBs b_/ Unfunded
1. Nuclear Power, Fuel Cycle and Nuclear Science							
1. Overall management, coordination and common activities	686 000	-	-	-	-	686 000	-
A. Nuclear Power	5 087 800	-	1 923 000	-	3 071 000	10 081 800	211 000
B. Nuclear Fuel Cycle and Materials Technologies	2 412 100	-	586 000	-	376 000	3 374 100	155 000
C. Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development	9 924 700	-	-	-	1 008 000	10 932 700	-
D. Nuclear Science	8 568 400	-	11 000	-	4 757 000	13 336 400	203 000
Major Programme 1	26 679 000	-	2 520 000	-	9 212 000	38 411 000	569 000
2. Nuclear Techniques for Development and Environmental Protection							
2. Overall management, coordination and common activities	746 600	-	-	-	-	746 600	-
E. Food and Agriculture	11 850 100	2 819 000	-	-	11 541 000	26 210 100	-
F. Human Health	7 614 700	65 000	-	-	24 503 000	32 182 700	345 000
G. Water Resources	3 278 200	-	-	-	4 547 000	7 825 200	230 000
H. Assessment and Management of Marine and Terrestrial Environments	5 060 700	200 000	450 000	-	2 319 000	8 029 700	38 000
I. Radioisotope Production and Radiation Technology	1 885 700	-	-	-	9 305 000	11 190 700	112 000
Major Programme 2	30 436 000	3 084 000	450 000	-	52 215 000	86 185 000	725 000
3. Nuclear Safety and Security							
3. Overall management, coordination and common activities	946 600	-	192 000	-	-	1 138 600	7 000
X. Incident and Emergency Preparedness and Response	913 700	-	570 000	800 000	361 000	2 644 700	350 000
J. Safety of Nuclear Installations	8 066 000	-	3 768 000	-	5 716 000	17 550 000	-
K. Radiation and Transport Safety	5 007 900	-	1 198 000	1 700 000	12 896 000	20 801 900	305 000
L. Management of Radioactive Waste	5 993 400	-	582 000	-	6 283 000	12 858 400	197 000
M. Nuclear Security	1 344 400	-	-	8 900 000	-	10 244 400	-
Major Programme 3	22 272 000	-	6 310 000	11 400 000	25 256 000	65 238 000	859 000
4. Nuclear Verification							
4. Overall management, coordination and common activities	983 500	-	-	-	-	983 500	-
N. Safeguards	105 352 500	-	13 574 000	-	-	118 926 500	3 050 000
O. Verification in Iraq Pursuant to UNSC Resolutions	-	12 295 000	-	-	-	12 295 000	-
Major Programme 4	106 336 000	12 295 000	13 574 000	-	-	132 205 000	3 050 000
5. Information Support Services							
P. Public Information and Communication	3 264 700	-	735 000	-	-	3 999 700	385 000
Q. Information and Communications Technology (ICT)	7 494 600	-	-	-	-	7 494 600	1 609 000
S. Conference, Translation and Publishing Services	5 232 700	-	-	-	-	5 232 700	-
Major Programme 5	15 992 000	-	735 000	-	-	16 727 000	1 994 000
6. Management of Technical Cooperation for Development							
6. Overall management, coordination and common activities	538 300	-	-	-	-	538 300	-
T. Management of Technical Cooperation for Development	14 857 700	-	216 000	-	-	15 073 700	-
Major Programme 6	15 396 000	-	216 000	-	-	15 612 000	-
7. Policy and General Management							
U. Executive Management, Policy-Making and Coordination	13 411 600	-	-	-	326 000	13 737 600	-
V. Administration and General Services	36 059 500	-	-	-	-	36 059 500	700 000
W. Oversight Services and Performance Assessment	1 787 900	-	136 000	-	-	1 923 900	-
Major Programme 7	51 259 000	-	136 000	-	326 000	51 721 000	700 000
Subtotal	268 370 000	15 379 000	23 941 000	11 400 000	87 009 000	406 099 000	7 897 000
8. Special Appropriation for Security Enhancements	2 430 000					2 430 000	
Agency Programmes	270 800 000	15 379 000	23 941 000	11 400 000	87 009 000	408 529 000	7 897 000
Plus: Reimbursable Work for Others	2 819 000	-	-	-	-	2 819 000	-
Total Regular Budget	273 619 000	15 379 000	23 941 000	11 400 000	87 009 000	411 348 000	7 897 000
SOURCE OF FUNDS:							
Assessment on Member States	267 798 000					267 798 000	
Income from reimbursable work for others	2 819 000					2 819 000	
Other miscellaneous income	3 002 000					3 002 000	
Other UN organizations		15 379 000			350 000 d_/	15 729 000	
Technical Cooperation Fund					73 924 000	73 924 000	
Extrabudgetary Programme			23 941 000	11 400 000	12 735 000	48 076 000	
Total Budget	273 619 000	15 379 000	23 941 000	11 400 000	87 009 000	411 348 000	-

a_/ Funds from FAO, UNEP, UN, WHO.

b_/ Core activities unfunded in the regular budget. Refer to paragraph 15 for definition.

c_/ Funded from Technical Cooperation Fund and extrabudgetary contributions.

d_/ UNDP only.

Table 3(b). Total Resource Requirements for 2007 by Programme and Major Programme

Programme / Major Programme	Regular Budget 2007 estimates at 2006 prices	Funds a_/ from UN organizations	CAURBs b_/ Extrabudgetary	NSF	TC Programme c_/	Total	CAURBs b_/ Unfunded
1. Nuclear Power, Fuel Cycle and Nuclear Science							
1. Overall management, coordination and common activities	685 900	-	-	-	-	685 900	-
A. Nuclear Power	5 088 000	-	1 946 000	-	3 083 000	10 117 000	266 000
B. Nuclear Fuel Cycle and Materials Technologies	2 412 100	-	376 000	-	378 000	3 166 100	193 000
C. Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development	10 011 400	-	-	-	1 013 000	11 024 400	-
D. Nuclear Science	8 567 600	-	11 000	-	4 778 000	13 356 600	195 000
Major Programme 1	26 765 000	-	2 333 000	-	9 252 000	38 350 000	654 000
2. Nuclear Techniques for Development and Environmental Protection							
2. Overall management, coordination and common activities	745 600	-	-	-	-	745 600	-
E. Food and Agriculture	11 849 600	2 819 000	-	-	11 591 000	26 259 600	-
F. Human Health	7 650 000	40 000	-	-	24 611 000	32 301 000	278 000
G. Water Resources	3 288 300	-	-	-	4 565 000	7 853 300	240 000
H. Assessment and Management of Marine and Terrestrial Environments	5 099 200	200 000	450 000	-	2 329 000	8 078 200	28 000
I. Radioisotope Production and Radiation Technology	1 911 300	-	-	-	9 344 000	11 255 300	199 000
Major Programme 2	30 544 000	3 059 000	450 000	-	52 440 000	86 493 000	745 000
3. Nuclear Safety and Security							
3. Overall management, coordination and common activities	951 800	-	192 000	-	-	1 143 800	24 000
X. Incident and Emergency Preparedness and Response	943 100	-	570 000	800 000	362 000	2 675 100	250 000
J. Safety of Nuclear Installations	8 089 300	-	3 768 000	-	5 741 000	17 598 300	-
K. Radiation and Transport Safety	5 000 300	-	1 198 000	1 700 000	12 952 000	20 850 300	460 000
L. Management of Radioactive Waste	5 996 100	-	582 000	-	6 311 000	12 889 100	173 000
M. Nuclear Security	1 344 400	-	-	8 900 000	-	10 244 400	-
Major Programme 3	22 325 000	-	6 310 000	11 400 000	25 366 000	65 401 000	907 000
4. Nuclear Verification							
4. Overall management, coordination and common activities	983 500	-	-	-	-	983 500	-
N. Safeguards	107 179 500	-	12 144 000	-	-	119 323 500	3 160 000
O. Verification in Iraq Pursuant to UNSC Resolutions	-	12 295 000	-	-	-	12 295 000	-
Major Programme 4	108 163 000	12 295 000	12 144 000	-	-	132 602 000	3 160 000
5. Information Support Services							
P. Public Information and Communication	3 321 700	-	735 000	-	-	4 056 700	395 000
Q. Information and Communications Technology (ICT)	7 494 600	-	-	-	-	7 494 600	1 609 000
S. Conference, Translation and Publishing Services	5 175 700	-	-	-	-	5 175 700	-
Major Programme 5	15 992 000	-	735 000	-	-	16 727 000	2 004 000
6. Management of Technical Cooperation for Development							
6. Overall management, coordination and common activities	538 300	-	-	-	-	538 300	-
T. Management of Technical Cooperation for Development	14 857 700	-	136 000	-	-	14 993 700	-
Major Programme 6	15 396 000	-	136 000	-	-	15 532 000	-
7. Policy and General Management							
U. Executive Management, Policy-Making and Coordination	13 411 600	-	-	-	327 000	13 738 600	-
V. Administration and General Services	36 059 500	-	-	-	-	36 059 500	700 000
W. Oversight Services and Performance Assessment	1 787 900	-	136 000	-	-	1 923 900	-
Major Programme 7	51 259 000	-	136 000	-	327 000	51 722 000	700 000
Subtotal	270 444 000	15 354 000	22 244 000	11 400 000	87 385 000	406 827 000	8 170 000
8. Special Appropriation for Security Enhancements	2 430 000					2 430 000	
Agency Programmes	272 874 000	15 354 000	22 244 000	11 400 000	87 385 000	409 257 000	8 170 000
Plus: Reimbursable Work for Others	2 650 000	-	-	-	-	2 650 000	-
Total Regular Budget	275 524 000	15 354 000	22 244 000	11 400 000	87 385 000	411 907 000	8 170 000
SOURCE OF FUNDS:							
Assessment on Member States	269 865 000					269 865 000	
Income from reimbursable work for others	2 650 000					2 650 000	
Other miscellaneous income	3 009 000					3 009 000	
Other UN organizations		15 354 000			350 000 d_/	15 704 000	
Technical Cooperation Fund					74 300 000	74 300 000	
Extrabudgetary Programme			22 244 000	11 400 000	12 735 000	46 379 000	
Total Budget	275 524 000	15 354 000	22 244 000	11 400 000	87 385 000	411 907 000	-

a_/ Funds from FAO, UNEP, UN, WHO.

b_/ Core activities unfunded in the regular budget. Refer to paragraph 15 for definition.

c_/ Funded from Technical Cooperation Fund and extrabudgetary contributions.

d_/ UNDP only.

Table 4. The Regular Budget — By Item of Expenditure

Item of expenditure	2004 actual expenditure	2005 budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 with price increase	2007 with price increase
Salaries - established posts - P	56 505 009	66 034 900	(2 930 200)	(4.4)	63 104 700	262 100	0.4	63 366 800	0.1	63 167 500	63 429 900
Temporary assistance - P/ MT	5 134 442	6 105 500	2 512 600	41.2	8 618 100	189 200	2.2	8 807 300	0.1	8 626 500	8 815 900
Temporary assistance - P/ ST	625 130	1 021 100	(64 500)	(6.3)	956 600	27 900	2.9	984 500	-	957 000	985 100
Salaries - established posts - GS	29 717 388	31 126 100	(792 000)	(2.5)	30 334 100	39 600	0.1	30 373 700	1.8	30 879 700	30 919 900
Temporary assistance - GS/ MT	2 841 662	3 070 200	636 700	20.7	3 706 900	-	-	3 706 900	1.8	3 773 800	3 773 800
Temporary assistance - GS/ ST	1 021 113	312 100	68 500	21.9	380 600	700	0.2	381 300	1.9	387 800	388 500
Common staff costs	44 728 344	46 466 400	1 861 500	4.0	48 327 900	232 300	0.5	48 560 200	0.6	48 617 400	48 852 000
Overtime	335 433	238 000	22 500	9.5	260 500	1 700	0.7	262 200	1.5	264 500	266 200
Subtotal: Staff costs	140 908 521	154 374 300	1 315 100	0.9	155 689 400	753 500	0.5	156 442 900	0.6	156 674 200	157 431 300
Travel - staff	9 467 958	10 724 700	662 600	6.2	11 387 300	117 300	1.0	11 504 600	2.3	11 648 600	11 768 600
Travel - non-staff	6 295 620	7 789 700	(89 600)	(1.2)	7 700 100	210 900	2.7	7 911 000	4.2	8 023 600	8 243 100
Subtotal: Travel costs	15 763 578	18 514 400	573 000	3.1	19 087 400	328 200	1.7	19 415 600	3.1	19 672 200	20 011 700
Interpretation services	537 886	820 600	(71 500)	(8.7)	749 100	(60 000)	(8.0)	689 100	-	749 100	689 100
Representation and hospitality	238 667	220 000	12 300	5.6	232 300	(200)	(0.1)	232 100	0.6	233 800	233 600
Training	581 751	932 500	128 500	13.8	1 061 000	(195 900)	(18.5)	865 100	0.8	1 069 300	872 900
Equipment: leased or rented	474 006	323 300	85 200	26.4	408 500	-	-	408 500	2.8	419 800	419 800
Equipment purchased/ construction work	6 328 789	9 874 300	1 411 000	14.3	11 285 300	473 200	4.2	11 758 500	2.6	11 576 900	12 081 100
Equipment Replacement Fund contribution	-	-	-	-	-	-	-	-	-	-	-
Supplies and materials	4 818 069	5 378 400	342 800	6.4	5 721 200	5 000	0.1	5 726 200	3.6	5 928 400	5 933 400
General operating expenses	17 721 692	17 657 300	1 453 700	8.2	19 111 000	(1 900)	-	19 109 100	2.4	19 573 200	19 571 500
Contracts	9 085 500	10 686 300	(2 279 800)	(21.3)	8 406 500	800 100	9.5	9 206 600	1.8	8 558 500	9 373 400
Research and technical contracts	4 881 745	5 256 900	(466 400)	(8.9)	4 790 500	(213 500)	(4.5)	4 577 000	3.9	4 978 100	4 756 100
Miscellaneous	3 204 761	3 433 100	122 400	3.6	3 555 500	39 500	1.1	3 595 000	2.0	3 626 500	3 666 800
Subtotal: Other direct costs	47 872 866	54 582 700	738 200	1.4	55 320 900	846 300	1.5	56 167 200	2.5	56 713 600	57 597 700
Direct implementation costs	10 192 449	10 333 500	952 100	9.2	11 285 600	92 000	0.8	11 377 600	1.4	11 446 500	11 540 300
Management and oper. costs of the IAEA's lab.	4 168 592	4 202 900	(44 900)	(1.1)	4 158 000	-	-	4 158 000	1.4	4 217 400	4 217 400
Laboratory Activities	14 361 041	14 536 400	907 200	6.2	15 443 600	92 000	0.6	15 535 600	1.4	15 663 900	15 757 700
Translation and Records Services	5 496 558	5 581 100	(10 100)	(0.2)	5 571 000	100	-	5 571 100	0.8	5 613 200	5 613 100
Printing Services	2 171 219	2 106 900	(34 700)	(1.6)	2 072 200	(2 600)	(0.1)	2 069 600	2.3	2 120 600	2 118 600
Data Processing Application Services	1 156 987	798 500	183 300	23.0	981 800	1 500	0.2	983 300	0.9	990 900	992 500
Data Processing Central Services (unallocated)	5 514 327	6 665 500	55 000	0.8	6 720 500	-	-	6 720 500	1.1	6 793 800	6 793 800
Data Processing Central Services (SG fixed costs)	1 328 500	1 371 400	-	-	1 371 400	-	-	1 371 400	1.4	1 390 800	1 390 800
Medical Services	800 009	923 500	-	-	923 500	-	-	923 500	1.4	936 600	936 600
Contracts Administration Services	542 527	629 700	(2 000)	(0.3)	627 700	-	-	627 700	1.2	635 400	635 400
Radiation Protection and Monitoring Services	1 066 419	1 148 600	-	-	1 148 600	-	-	1 148 600	1.4	1 164 800	1 164 800
Subtotal: Shared costs	18 076 546	19 225 200	191 500	1.0	19 416 700	(1 000)	-	19 415 700	1.2	19 646 100	19 645 600
Subtotal	236 982 552	261 233 000	3 725 000	1.4	264 958 000	2 019 000	0.8	266 977 000	1.3	268 370 000	270 444 000
8. Special Appropriation for Security Enhancements a_/			2 398 000	-	2 398 000	-	-	2 398 000	1.3	2 430 000	2 430 000
Regular Budget for Agency Programmes	236 982 552	261 233 000	6 123 000	2.3	267 356 000	2 019 000	0.8	269 375 000	1.3	270 800 000	272 874 000
Reimbursable Work for Others	2 137 664	2 726 000	48 000	1.8	2 774 000	(166 000)	(6.0)	2 608 000	1.6	2 819 000	2 650 000
Total Regular Budget	239 120 216	263 959 000	6 171 000	2.3	270 130 000	1 853 000	0.7	271 983 000	1.3	273 619 000	275 524 000

a_/ Supplementary Budget Appropriation of €4 453 000 for 2004 approved at the General Conference in that year [GC(48)/RES/5]

Table 5. Agency's Laboratory Activities

Item of expenditure	2004 actual expenditure	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 with price increase	2007 with price increase
Salaries - established posts - P	2 333 959	2 596 100	78 600	3.0	2 674 700	-	-	2 674 700	0.1	2 677 400	2 677 400
Temporary assistance - P/ MT	162 660	143 400	258 800	180.5	402 200	-	-	402 200	0.1	402 600	402 600
Temporary assistance - P/ ST	-	-	-	-	-	-	-	-	-	-	-
Salaries - established posts - GS	3 573 799	4 089 100	(251 300)	(6.1)	3 837 800	-	-	3 837 800	1.8	3 906 900	3 906 900
Temporary assistance - GS/ MT	459 305	358 000	(74 500)	(20.8)	283 500	-	-	283 500	1.8	288 600	288 600
Temporary assistance - GS/ ST	7 876	24 000	(24 000)	(100.0)	-	-	-	-	-	-	-
Common staff costs	3 054 863	3 114 700	133 400	4.3	3 248 100	-	-	3 248 100	1.0	3 281 300	3 281 300
Overtime	71 643	59 100	18 400	31.1	77 500	3 900	5.0	81 400	1.8	78 900	82 900
Subtotal: Staff costs	9 664 105	10 384 400	139 400	1.3	10 523 800	3 900	-	10 527 700	1.1	10 635 700	10 639 700
Travel - staff	115 914	124 800	2 000	1.6	126 800	-	-	126 800	2.3	129 700	129 700
Travel - non-staff	65 275	69 000	70 200	101.7	139 200	-	-	139 200	4.2	145 000	145 000
Subtotal: Travel costs	181 189	193 800	72 200	37.3	266 000	-	-	266 000	3.3	274 700	274 700
Interpretation services	-	-	-	-	-	-	-	-	-	-	-
Representation and hospitality	1 247	4 100	(2 300)	(56.1)	1 800	-	-	1 800	-	1 800	1 800
Training	6 476	32 500	17 600	54.2	50 100	(4 200)	(8.4)	45 900	1.4	50 800	46 500
Equipment: leased or rented	7 706	22 200	(15 200)	(68.5)	7 000	-	-	7 000	2.9	7 200	7 200
Equipment purchased/ construction work	549 374	516 900	150 700	29.2	667 600	-	-	667 600	2.7	685 600	685 600
Equipment Replacement Fund contribution	-	-	-	-	-	-	-	-	-	-	-
Supplies and materials	1 228 497	998 800	153 300	15.3	1 152 100	84 400	7.3	1 236 500	3.0	1 186 700	1 272 500
General operating expenses	2 337 375	2 039 200	191 300	9.4	2 230 500	3 800	0.2	2 234 300	1.3	2 259 500	2 263 300
Contracts	529 802	262 900	173 000	65.8	435 900	5 000	1.1	440 900	3.1	449 400	454 600
Research and technical contracts	-	-	40 000	-	40 000	-	-	40 000	4.0	41 600	41 600
Miscellaneous	19 252	248 200	33 800	13.6	282 000	(100)	-	281 900	0.6	283 600	283 500
Subtotal: Other direct costs	4 679 729	4 124 800	742 200	18.0	4 867 000	88 900	1.8	4 955 900	2.0	4 966 200	5 056 600
Direct implementation costs	(10 192 449)	(10 333 500)	(952 100)	9.2	(11 285 600)	(92 000)	0.8	(11 377 600)	1.4	(11 446 500)	(11 540 300)
Management and oper. costs of the IAEA's lab.	(4 168 592)	(4 202 900)	44 900	(1.1)	(4 158 000)	-	-	(4 158 000)	1.4	(4 217 400)	(4 217 400)
Laboratory Activities a_/	(14 361 041)	(14 536 400)	(907 200)	6.2	(15 443 600)	(92 000)	0.6	(15 535 600)	1.4	(15 663 900)	(15 757 700)
Translation and Records Services	4 781	5 000	100	2.0	5 100	(100)	(2.0)	5 000	-	5 100	5 200
Printing Services	15 296	15 600	800	5.1	16 400	(400)	(2.4)	16 000	2.4	16 800	16 400
Data Processing Application Services	12 250	12 800	500	3.9	13 300	(300)	(2.3)	13 000	0.8	13 400	13 100
Data Processing Central Services (unallocated)	-	-	-	-	-	-	-	-	-	-	-
Data Processing Central Services (SG fixed costs)	-	-	-	-	-	-	-	-	-	-	-
Medical Services	-	-	-	-	-	-	-	-	-	-	-
Contracts Administration Services	2 749	-	2 000	-	2 000	-	-	2 000	-	2 000	2 000
Radiation Protection and Monitoring Services	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Shared costs	35 076	33 400	3 400	10.2	36 800	(800)	(2.2)	36 000	1.4	37 300	36 700
Reimbursable Work for Others	199 058	200 000	50 000	25.0	250 000	-	-	250 000	-	250 000	250 000
a_/											
MP.1	1 457 034	1 599 300	-	-	1 599 300	-	-	1 599 300	1.4	1 622 200	1 622 200
MP.2	8 139 583	8 012 300	537 200	6.7	8 549 500	92 000	1.1	8 641 500	1.4	8 671 400	8 765 200
MP.4	4 764 424	4 924 800	370 000	7.5	5 294 800	-	-	5 294 800	1.4	5 370 300	5 370 300
TOTAL Agency's Laboratory Activities	14 361 041	14 536 400	907 200	6.2	15 443 600	92 000	0.6	15 535 600	1.4	15 663 900	15 757 700

Table 6. Shared Costs

Item of expenditure	2004 actual expenditure	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 with price increase	2007 with price increase
Salaries - established posts - P	4 579 840	5 892 200	(468 200)	(7.9)	5 424 000	-	-	5 424 000	0.1	5 429 600	5 429 600
Temporary assistance - P/ MT	116 601	189 900	2 300	1.2	192 200	-	-	192 200	0.1	192 400	192 400
Temporary assistance - P/ ST	93 913	-	-	-	-	-	-	-	-	-	-
Salaries - established posts - GS	4 391 382	4 708 100	(52 300)	(1.1)	4 655 800	(125 000)	(2.7)	4 530 800	1.8	4 739 700	4 612 400
Temporary assistance - GS/ MT	332 323	469 800	(5 900)	(1.3)	463 900	-	-	463 900	1.8	472 400	472 400
Temporary assistance - GS/ ST	373 331	77 200	21 400	27.7	98 600	-	-	98 600	1.8	100 400	100 400
Common staff costs	4 614 914	4 896 500	(7 400)	(0.2)	4 889 100	(56 300)	(1.2)	4 832 800	0.9	4 931 000	4 874 400
Overtime	78 439	58 300	2 400	4.1	60 700	-	-	60 700	2.0	61 900	61 900
Subtotal: Staff costs	14 580 743	16 292 000	(507 700)	(3.1)	15 784 300	(181 300)	(1.1)	15 603 000	0.9	15 927 400	15 743 500
Travel - staff	58 023	59 000	(8 000)	(13.6)	51 000	-	-	51 000	2.0	52 000	52 000
Travel - non-staff	54 008	42 700	27 300	63.9	70 000	(11 000)	(15.7)	59 000	4.1	72 900	61 600
Subtotal: Travel costs	112 031	101 700	19 300	19.0	121 000	(11 000)	(9.1)	110 000	3.2	124 900	113 600
Interpretation services	-	-	-	-	-	-	-	-	-	-	-
Representation and hospitality	95	1 100	-	-	1 100	-	-	1 100	-	1 100	1 100
Training	67 984	153 900	(17 000)	(11.0)	136 900	-	-	136 900	1.3	138 700	138 700
Equipment: leased or rented	884 976	1 292 500	545 500	42.2	1 838 000	(3 000)	(0.2)	1 835 000	2.8	1 889 600	1 886 500
Equipment purchased/ construction work	539 649	329 200	(51 200)	(15.6)	278 000	16 000	5.8	294 000	3.1	286 500	302 900
Equipment Replacement Fund contribution	-	-	-	-	-	-	-	-	-	-	-
Supplies and materials	967 987	730 500	(133 600)	(18.3)	596 900	-	-	596 900	2.9	614 400	614 400
General operating expenses	1 280 434	1 962 400	27 100	1.4	1 989 500	-	-	1 989 500	1.4	2 016 500	2 016 500
Contracts	1 642 640	834 600	195 900	23.5	1 030 500	11 500	1.1	1 042 000	1.8	1 049 200	1 061 000
Research and technical contracts	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous	(26 311)	26 700	114 600	429.2	141 300	-	-	141 300	2.0	144 100	144 100
Subtotal: Other direct costs	5 357 454	5 330 900	681 300	12.8	6 012 200	24 500	0.4	6 036 700	2.1	6 140 100	6 165 200
Direct implementation costs	-	-	-	-	-	-	-	-	-	-	-
Management and oper. costs of the IAEA's lab.	-	-	-	-	-	-	-	-	-	-	-
Laboratory Activities	-	-	-	-	-	-	-	-	-	-	-
Translation and Records Services	13 674	5 900	10 000	169.5	15 900	-	-	15 900	0.6	16 000	16 000
Printing Services	16 042	14 900	1 000	6.7	15 900	-	-	15 900	2.5	16 300	16 300
Data Processing Application Services	276 071	26 500	11 000	41.5	37 500	-	-	37 500	1.1	37 900	37 900
Data Processing Central Services (unallocated)	-	-	-	-	-	-	-	-	-	-	-
Data Processing Central Services (SG fixed costs)	-	-	-	-	-	-	-	-	-	-	-
Medical Services	-	-	-	-	-	-	-	-	-	-	-
Contracts Administration Services	-	-	-	-	-	-	-	-	-	-	-
Radiation Protection and Monitoring Services	-	-	-	-	-	-	-	-	-	-	-
Subtotal: Shared costs	305 787	47 300	22 000	46.5	69 300	-	-	69 300	1.3	70 200	70 200
T O T A L	20 356 015	21 771 900	214 900	1.0	21 986 800	(167 800)	(0.8)	21 819 000	1.3	22 262 600	22 092 500
Less:											
Cross-charge (above)	305 787	47 300	22 000	46.5	69 300	-	-	69 300	1.3	70 200	70 200
Cross-charge Laboratory Activities	35 076	33 400	3 400	10.2	36 800	(800)	(2.2)	36 000	1.4	37 300	36 700
TOTAL Shared Services	20 015 152	21 691 200	189 500	0.9	21 880 700	(167 000)	(0.8)	21 713 700	1.3	22 155 100	21 985 600
Less:											
Transfer to Programmes Q and S	5 514 327	6 665 500	55 000	0.8	6 720 500	-	-	6 720 500	1.1	6 793 800	6 793 800
Allocation to Agency Programmes	12 562 219	12 559 700	136 500	1.1	12 696 200	(1 000)	-	12 695 200	1.2	12 852 300	12 851 800
Reimbursable Work for Others	1 938 606	2 466 000	(2 000)	(0.1)	2 464 000	(166 000)	(6.7)	2 298 000	1.8	2 509 000	2 340 000
	-	-	-	-	-	-	-	-	-	-	-

Table 7. The Regular Budget — Staff Costs

Item of expenditure	2004 actual expenditure	2005 budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 with price increase	2007 with price increase
Salaries - established posts - P	63 418 808	74 523 200	(3 319 800)	(4.5)	71 203 400	262 100	0.4	71 465 500	0.1	71 274 500	71 536 900
Temporary assistance - P/ MT	5 413 703	6 438 800	2 773 700	43.1	9 212 500	189 200	2.1	9 401 700	0.1	9 221 500	9 410 900
Temporary assistance - P/ ST	719 043	1 021 100	(64 500)	(6.3)	956 600	27 900	2.9	984 500	-	957 000	985 100
Salaries - established posts - GS	37 682 569	39 923 300	(1 095 600)	(2.7)	38 827 700	(85 400)	(0.2)	38 742 300	1.8	39 526 300	39 439 200
Temporary assistance - GS/ MT	3 633 290	3 898 000	556 300	14.3	4 454 300	-	-	4 454 300	1.8	4 534 800	4 534 800
Temporary assistance - GS/ ST	1 402 320	413 300	65 900	15.9	479 200	700	0.1	479 900	1.9	488 200	488 900
Common staff costs	52 398 121	54 477 600	1 987 500	3.6	56 465 100	176 000	0.3	56 641 100	0.6	56 829 700	57 007 700
Overtime	485 515	355 400	43 300	12.2	398 700	5 600	1.4	404 300	1.7	405 300	411 000
Total: Staff costs	165 153 369	181 050 700	946 800	0.5	181 997 500	576 100	0.3	182 573 600	0.7	183 237 300	183 814 500

THE PROGRAMME AND BUDGET

BY MAJOR PROGRAMME

Major Programme 1 – NUCLEAR POWER, FUEL CYCLE AND NUCLEAR SCIENCE

Introduction

Major Programme 1 provides support to interested Member States in establishing, maintaining and strengthening nuclear science, nuclear power, the nuclear fuel cycle and spent fuel management — all with due regard to safety, security and non-proliferation. Major Programme 1 also works to catalyse innovation for sustainable growth, and to ensure the continuity and further development of nuclear knowledge, capacity building and competence.

Projections indicate that coming years will see more nuclear electricity generation than at the current time, as well as increased interest in nuclear power. At the same time the nuclear industry must deal with a generally ageing workforce, particularly in countries with nuclear phase-out policies or where nuclear power has reached a plateau. Important progress is expected in the near term on the first long term high level waste repositories, and more countries will have to take critical decisions on starting their own repositories and/or expanding and extending spent fuel storage. As a consequence of the events of 11 September 2001, and recent challenges to the global non-proliferation regime, increased attention will be given to proliferation resistance throughout the fuel cycle, to multilateral approaches to key fuel cycle facilities and to ways to enhance proliferation resistance without discouraging the beneficial spread of nuclear power and other peaceful nuclear applications.

Increased interest in regional integration of nuclear power and fuel cycle activities is expected. Continuing progress in information technology will create new stakeholder expectations for Agency activities concerning nuclear data, nuclear knowledge and capacity building. There will be an increasing need to apply new scientific tools to help move from empirical to new fundamental nuclear knowledge, particularly with respect to innovative designs, materials performance, spent fuel behaviour and management. The International Thermonuclear Experimental Reactor (ITER) could be under construction by 2006. The Agency will then be an important mechanism for countries outside the principal group of the main ITER parties to engage in controlled nuclear fusion activities and benefit fully from it.

The Agency has been requested to help develop skills in interested Member States to manage change caused by deregulation and ageing facilities and personnel, and to help expand information exchange with special attention paid to capacity building in developing country Member States. It must help expand regional capabilities for energy systems analysis and innovation, help develop enabling technologies common to innovative nuclear energy systems and facilitate collaboration on R&D for innovation at the regional and international levels.

The Agency has also been requested to provide guidance and support to help sustain the nuclear experience, nuclear research facilities and the knowledge base relevant to nuclear research, nuclear expansion, replacing retiring nuclear plants with new nuclear plants, new applications and phase-outs. It has also been asked to help connect centres of nuclear expertise for innovation with centres of high nuclear power growth.

The Agency is in a position to ensure support to complete the fuel cycle and help identify future infrastructure needs, particularly concerning innovative fuel cycle and spent fuel management concepts. And in the area of nuclear science, the Agency has been requested to assist Member States in expanding capabilities with respect to atomic, molecular and nuclear data, fundamental science in support of nuclear energy, plasma physics and fusion, new accelerator applications and spallation sources, the two latter topics also in the framework of innovative nuclear systems for transmutation of long-lived nuclear waste.

Objective

To support and enhance the contribution of nuclear science and nuclear energy to sustainable development.

Outcomes
— Increased use of the Agency's knowledge resources, guidance and recommendations in nuclear science, managing nuclear facilities and programmes, addressing urgent issues throughout the fuel cycle and promoting development of evolutionary and innovative designs and their applications.
— Increased use of the Agency's knowledge resources, analytical tools, analyses and assistance in energy system assessment, particularly in developing Member States and economies in transition, and in international deliberations and analyses about sustainable development.
— Increased international cooperation and national competence in nuclear science and better use of resources and facilities.
— Nuclear option remains open for all interested Member States.
Performance Indicators
— Number of Member States using the Agency's knowledge resources, guidance, recommendations, analytical tools, analyses and assistance, and the level of use and degree of Member State satisfaction, where these can be measured.

Performance Indicators (cont'd)
— Number of joint initiatives, joint products and other interactions with national and international organizations.
— Consideration of the nuclear option in international forums.

Recurrent Project: Overall management, coordination and common activities

The overall coordination and advisory activities within the major programme relate to, and interact with, all of the programmes and are crucial for achieving efficiency and effectiveness in programme implementation. Several others, including the preparation of documents for the Policy-making Organs, the Nuclear Technology Review and coordination in nuclear knowledge management, research reactors and quality assurance, cut across all programme areas of nuclear power, fuel cycle and materials, nuclear science, and analysis for sustainable development. Their efficient implementation contributes to an increase of programme transparency and outreach.

Main outputs: This project will result in: guidance, reports, policy documents, advice and recommendations.

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Programme Structure and Resources

Table 8

	Project / Subprogramme / Programme	2006			2007		
		Regular Budget at 2006 prices	Extra-budgetary a_/	CAURBs Unfunded	Regular Budget at 2006 prices	Extra-budgetary a_/	CAURBs Unfunded
1.	Overall management, coordination and common activities	686 000	-	-	685 900	-	-
	Total	686 000	-	-	685 900	-	-
A.1.01	Continuous process optimization and management	381 400	-	-	383 900	-	-
A.1.02	Integrated NPP life cycle management	708 000	-	23 000	729 500	-	41 000
A.1.03	Databases to support NPP performance and life cycle management and improving human performance, quality and technical infrastructure	366 700	-	-	366 100	-	-
	Subprogramme A.1: Nuclear Power Plant Operating Performance and Life Cycle Management	1 456 100	-	23 000	1 479 500	-	41 000
A.2.01	Strengthening and harmonizing quality management systems	330 100	-	7 000	317 700	-	84 000
A.2.02	Strengthening national and regional nuclear power infrastructures	431 300	-	21 000	432 400	-	21 000
A.2.03	Achieving excellence in the performance of NPP personnel	524 200	-	-	511 800	-	-
	Subprogramme A.2: Improving Organizational Performance	1 285 600	-	28 000	1 261 900	-	105 000
A.3.01	Development of requirements and guidance for innovative nuclear energy systems (INS)	165 100	1 113 000	-	165 100	1 143 000	-
A.3.02	Coordination of international activities for innovative nuclear energy systems (INS)	143 800	785 000	-	143 800	768 000	-
	Subprogramme A.3: Coordination of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)	308 900	1 898 000	-	308 900	1 911 000	-
A.4.01	Technology advances in water cooled reactors for improvements in economics and safety	541 500	-	27 000	561 700	-	17 000
A.4.02	Technology advances in fast reactors and accelerator driven systems	394 600	-	29 000	362 400	-	5 000
A.4.03	Technology advances for gas cooled reactors (GCR)	244 400	-	-	260 000	-	15 000
A.4.04	Common technologies and issues for small and medium sized reactors (SMR)	316 300	10 000	89 000	343 300	-	60 000
	Subprogramme A.4: Technology Development for Advanced Reactor Lines	1 496 800	10 000	145 000	1 527 400	-	97 000
A.5.01	Support for demonstration of nuclear seawater desalination	369 700	15 000	15 000	350 000	15 000	23 000
A.5.02	Nuclear hydrogen production	170 700	-	-	160 300	20 000	-
	Subprogramme A.5: Support for Non-Electric Applications of Nuclear Power	540 400	15 000	15 000	510 300	35 000	23 000
Programme A - Nuclear Power		5 087 800	1 923 000	211 000	5 088 000	1 946 000	266 000

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Programme Structure and Resources
Table 8 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
B.1.01	Maintaining and improving information on the nuclear fuel cycle	491 300	-	-	489 700	-	-
B.1.02	Enhancing communication on and analysis of the nuclear fuel cycle	256 600	-	-	257 600	-	-
	Subprogramme B.1: Information and Analysis of the Nuclear Fuel Cycle and Materials Management	747 900	-	-	747 300	-	-
B.2.01	Supporting the sharing of experience in the development and use of fuel structural materials and water chemistry management in nuclear power plants	106 100	-	57 000	114 400	-	57 000
B.2.02	Promoting good fuel performance and operating practice for current fuel types in water cooled power reactors	245 700	-	-	217 800	-	-
B.2.03	Promoting best practices in fuel design and manufacturing and the implementation of new fuel types	193 000	-	-	217 900	-	-
	Subprogramme B.2: Nuclear Power Reactor Fuel Engineering	544 800	-	57 000	550 100	-	57 000
B.3.01	Promoting technologies and strategies for spent fuel management	233 300	-	30 000	250 000	-	10 000
B.3.02	Providing technical guidance on good practices for long term storage of spent fuel	294 100	-	-	273 200	-	-
	Subprogramme B.3: Management of Spent Fuel from Nuclear Power Reactors	527 400	-	30 000	523 200	-	10 000
B.4.01	Supporting enhancement of nuclear fuel cycle materials processing and management technologies	373 200	-	38 000	376 200	-	71 000
B.4.02	Providing insight for and support in addressing proliferation resistance in the current and future nuclear fuel cycle and materials management	218 800	586 000	30 000	215 300	376 000	55 000
	Subprogramme B.4: Topical Nuclear Fuel Cycle Issues	592 000	586 000	68 000	591 500	376 000	126 000
	Programme B - Nuclear Fuel Cycle and Materials Technologies	2 412 100	586 000	155 000	2 412 100	376 000	193 000

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Programme Structure and Resources

Table 8 (Contd.)

	Project / Subprogramme / Programme	2006			2007		
		Regular Budget at 2006 prices	Extra-budgetary a_/	CAURBs Unfunded	Regular Budget at 2006 prices	Extra-budgetary a_/	CAURBs Unfunded
C.1.01	Energy, electricity and nuclear power economics; databanks on status and trends	471 800	-	-	471 800	-	-
C.1.02	Models for analysis and capacity building for sustainable energy development	884 700	-	-	884 700	-	-
	Subprogramme C.1: Energy Modelling, Databanks and Capacity Building	1 356 500	-	-	1 356 500	-	-
C.2.01	Techno-economic analysis	737 400	-	-	737 400	-	-
C.2.02	Topical issues related to sustainable energy development	612 900	-	-	612 900	-	-
	Subprogramme C.2: Energy Economy Environment (3E) Analysis	1 350 300	-	-	1 350 300	-	-
C.3.01	Developing policy, methodology and guidance for nuclear knowledge management	330 400	-	-	425 700	-	-
C.3.02	Facilitating sustainable education and training in nuclear science and related fields	340 400	-	-	404 700	-	-
C.3.03	Maintenance and preservation of knowledge in specific areas of nuclear science and technology	809 000	-	-	809 000	-	-
	Subprogramme C.3: Nuclear Knowledge Management	1 479 800	-	-	1 639 400	-	-
C.4.01	INIS production and quality assurance	1 483 600	-	-	1 483 600	-	-
C.4.02	INIS services, outreach, capacity building and partnerships	907 100	-	-	907 100	-	-
C.4.03	INIS policy, planning, development and innovation	780 400	-	-	707 500	-	-
	Subprogramme C.4: International Nuclear Information System (INIS)	3 171 100	-	-	3 098 200	-	-
C.5.01	Development and maintenance of the library's information resources	1 398 000	-	-	1 398 000	-	-
C.5.02	Provision of library services and information support	1 169 000	-	-	1 169 000	-	-
	Subprogramme C.5: Library and Information Support	2 567 000	-	-	2 567 000	-	-
	Programme C - Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development	9 924 700	-	-	10 011 400	-	-

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Programme Structure and Resources

Table 8 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
D.1.01	Data services, data networks and user support	1 054 900	-	-	1 108 600	-	-
D.1.02	Nuclear data standards and evaluation methods	125 700	-	-	109 100	-	-
D.1.03	Nuclear data for radiotherapy using radioisotopes and external radiation sources	173 300	-	10 000	138 900	-	35 000
D.1.04	Atomic and molecular data for fusion experiments	398 000	11 000	-	388 700	11 000	35 000
D.1.05	Data for Th-U fuel cycle	172 000	-	-	130 300	-	-
D.1.06	Nuclear data for reactor dosimetry and analysis	221 800	-	-	217 600	-	-
D.1.07	Nuclear data for advanced nuclear facilities	238 700	-	-	290 800	-	-
	Subprogramme D.1: Atomic and Nuclear Data	2 384 400	11 000	10 000	2 384 000	11 000	70 000
D.2.01	Effective utilization of research reactors	332 900	-	30 000	301 600	-	60 000
D.2.02	Supporting research reactor modernization and innovation	146 900	-	-	136 500	-	-
D.2.03	Addressing research reactor fuel cycle issues	351 600	-	-	348 700	-	-
D.2.04	Facilitating transfer of know-how on decommissioning of research reactors and irradiated core materials	124 600	-	58 000	137 900	-	30 000
	Subprogramme D.2: Research Reactors	956 000	-	88 000	924 700	-	90 000
D.3.01	Effective utilization of particle accelerators	548 100	-	20 000	537 600	-	-
D.3.02	Nuclear instrumentation maintenance	1 128 000	-	-	1 138 600	-	-
D.3.03	Improvements in nuclear spectrometry applications	782 600	-	35 000	813 900	-	5 000
	Subprogramme D.3: Utilization of Accelerators and Instrumentation	2 458 700	-	55 000	2 490 100	-	5 000
D.4.01	Supporting plasma physics and fusion research	437 400	-	50 000	436 900	-	30 000
D.4.02	International Thermonuclear Experimental Reactor	92 000	-	-	92 000	-	-
	Subprogramme D.4: Nuclear Fusion Research	529 400	-	50 000	528 900	-	30 000
D.5.01	Support to ICTP	2 239 900	-	-	2 239 900	-	-
	Subprogramme D.5: Support to ICTP	2 239 900	-	-	2 239 900	-	-
Programme D - Nuclear Science		8 568 400	11 000	203 000	8 567 600	11 000	195 000
Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science		26 679 000	2 520 000	569 000	26 765 000	2 333 000	654 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme A. NUCLEAR POWER

Rationale: Enlarging the benefits of the peaceful uses of nuclear science and technology is a fundamental mandate of the Agency. Programme A provides the core engineering, technological and management support to interested Member States in the field of nuclear power with special emphasis on the needs of developing countries. Three important objectives have guided the formulation of priorities.

The first is to respond to the needs of interested Member States in improving their national nuclear power infrastructures and programmes and evaluate the need for possible replacement technology within the country. Those needs are especially important with regard to the performance and life optimization of nuclear power plants, including national decisions on the phase out of nuclear power and/or possible decommissioning. This will be through the provision of a worldwide pool of information and expertise on internationally accepted proven engineering and management practices in all relevant areas including technical and human performance improvement, change management, implementation of management systems and a total quality management approach to nuclear power plant (NPP) operations.

The second is to act as a catalyst for innovation and to assist, as appropriate, in the resolution of scientific and technological issues in the area of nuclear power including electricity generation and application for other uses such as desalination and hydrogen production. The Agency will coordinate cooperative research, promote information exchange and analyse technical data and results for various reactor lines (such as advanced water cooled reactors, high temperature gas cooled reactors, liquid metal cooled reactors and accelerator driven systems), and for innovative nuclear energy systems (INS) including small and medium sized reactors. The focus will be on supporting the establishment of nuclear power as a sustainable energy source for various applications, especially considering competitive economics, achieving very high levels of safety and proliferation resistance, effective use of resources and minimization of waste. The International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO) will provide the forum for coordination of programmes in Member States on INS development and for system analysis of the future role of nuclear energy on a regional and global basis.

The final objective is to manage, preserve and further enhance nuclear expertise and knowledge, competence and effectiveness in support of Member States, and sustain the Agency's unique position as the leading global international organization in the nuclear field. The Agency will continue to provide and update databases and knowledge supporting the optimization of performance, service life and infrastructure of nuclear power plants and supporting advanced reactor technology development and applications in Member States. This approach will allow for the expansion of partnerships and exchanges of information to facilitate the beneficial use of nuclear energy, including non-electric applications.

Objectives:

— To enhance the capability of interested Member States, in a rapidly changing market environment, to improve nuclear power plant operating performance, life cycle management including decommissioning, human performance, quality assurance and technical infrastructure, through good practices and innovative approaches consistent with global objectives on non-proliferation, nuclear safety and security.

— To enhance the capacity of Member States for the development of evolutionary and innovative nuclear system technology for electricity generation, actinide utilization and transmutation and for non-electric applications, consistent with sustainability goals.

— To encourage the improvement of public understanding of nuclear power.

Outcomes
— Use of the Agency's databases and recommendations in engineering, technology development and management practices in Member States. — Increased cooperation between Member States for evolutionary and innovative nuclear reactor technology development and applications.
Performance Indicators
— Number of Member States using the Agency's recommendations in engineering, technology development and management practices, evaluation methodology, guidance, databases and training methodologies. — Number of Member States cooperating in evolutionary and innovative nuclear reactor technology development and applications under Agency coordination.

Specific criteria for prioritization:

— First priority will be given to projects corresponding to General Conference resolutions.

— Second priority will be given to projects corresponding to Member State priorities.

— Third priority will be given to projects which help achieve programme objectives.

Subprogramme A.1. Nuclear Power Plant Operating Performance and Life Cycle Management

Rationale: Improving NPP performance, power uprating and operational licence extensions of NPPs continues to be a priority in Member States with operating plants. Ageing, performance and life cycle management issues need continuous attention. In response to these challenges associated with ageing facilities and staff, and an expanding knowledge base within the industry, the subprogramme will seek to sustain the experience and the knowledge necessary to support nuclear expansion and research. Also, a management and knowledge base must be available to Member States deciding possible phase outs of NPPs and research reactors, based on lifetime limiting factors. Important areas of focus include: operational experience, decommissioning and possible decommissioning management reviews and liability management, and replacement by new nuclear facilities to maintain capacity. The subprogramme will contribute to the exchange of experience and the application of advancements in science and technology such as better prediction of material degradation through the development of guidance on good engineering and management practices.

Databases to support these activities in Member States will be further developed and maintained. Requests from developing Member States in all geographical regions for services in the application of internationally proven practices will continue to be met through technical cooperation projects. Advice and recommendations on the framework of the activities have also been received from Standing Advisory Group on Nuclear Energy (SAGNE), Technical Working Groups and advisory groups of experts nominated by Member States.

Objective: To increase Member State capabilities in utilizing good engineering and management practices developed and transferred by the Agency.

Outcome
— Use of good engineering and management practices, transferred by the Agency, for improving NPP performance and competitiveness in Member States, and for optimizing plant service life, including decommissioning, of existing nuclear power plants with due regard to safety.
Performance Indicator
— Number of Member States using database and good engineering and management practices transferred by the Agency.

Programmatic changes and trends: Subprogramme A.1 remains unchanged. It has evolved to address trends toward the deregulation of utility businesses, ageing of nuclear facilities and workforce and new challenges in the growth of nuclear energy, as well as continued operation in the context of non-proliferation, safety and security concerns, and the need for continuous improvements in management systems.

Resource changes and trends: The proposed resources for Subprogramme A.1 amount to €1 434 600 in 2006, reflecting a decrease in the budget of €44 700, or 3.0%, over 2005, with an increase of €23 000, or 1.6% in 2007 over 2006. The decrease in 2006 results from a reduction of funds in the areas of continuous process optimization and management as well as databases to support NPP performance and life cycle management and improving human performance, quality and technical infrastructure. The increase in 2007 results from strengthened activities in the area of integrated NPP life cycle management.

Financial resources (2005 prices)

A.1	2005	2006	2007
Reg. budg.	1 479 300	1 434 600	1 457 600

Projects

Project A.1.01: Continuous process optimization and management

Main outputs: Technical documents on factors and approaches that have helped in improving NPP performance in recent years, and benchmark processes and long term strategies to assist, in the framework of continuous process optimization, in improvement of overall NPP performance and enhancement of safety within Member States.

Duration: 2004–2008

Ranking: 2

Recurrent Project A.1.02: Integrated NPP life cycle management

Main outputs: Guidance documents will be provided on: specific aspects of reactor pressure vessel integrity assessment; verification of steam generator tube integrity; state of the art methodologies for condition monitoring of NPP systems, structure and components; ageing management methodologies; economics of plant licence renewal; costs of decommissioning; and publication of the proceedings of the 2nd international symposium on Nuclear Power Plant Life Management.

Ranking: 1

Recurrent Project A.1.03: Databases to support NPP performance and life cycle management and improving human performance, quality and technical infrastructure

Main outputs: Development of databases on: Power Reactor Information System (PRIS), Country Nuclear Power Profiles (CNPP), Electronic Nuclear Training Centre Catalogue (ENTRAC) and Nuclear Power Plant Economic Performance Indicators (NEPIS) and review of a possible new database for component reliability.

Ranking: 2

Subprogramme A.2. Improving Organizational Performance

Rationale: The future of nuclear power will depend to a large extent on continually improving the economic competitiveness of current and new NPPs in the global market and by providing unbiased and objective data so that stakeholders can make a fair evaluation of nuclear energy applications. Establishing and enhancing a sound, stable and adequate nuclear power infrastructure in interested Member States through the sharing of internationally accepted good practices are essential steps to assist Member States which operate, or are considering the introduction of, NPPs. After completing the review and harmonization of Agency standards on quality assurance to reflect modern approaches and integration with ISO norms, these standards, changes and strategies for the implementation of effective management systems will be disseminated and advice will be provided on their use and application. There is concern in Member States regarding the shortage of human resources with the appropriate skills and knowledge to ensure the good management of nuclear power plants. More active collaboration between nuclear power utilities, nuclear research centres and educational institutions through the development of a network of national, regional and collaborating training centres is essential. The increasing requests from developing Member States related to the implementation of Agency guidance for the development of the necessary infrastructure for the application of nuclear power will be met through technical cooperation projects.

Objective: To enhance Member State capabilities for planning, implementation and/or expansion of nuclear power programmes, improving human performance and strengthening quality and technical infrastructure, consistent with global requirements on non-proliferation, safety and security, by utilizing good engineering and management practices developed and transferred by the Agency.

Outcome
— Use of proven engineering and management practices developed and transferred by the Agency for improving human performance, quality and technical infrastructure necessary to manage, develop and regulate, by relevant organizations in the Member States.
Performance Indicator
— Number of Member States using Agency guidance on proven engineering and management practices for improving human performance, quality and technical infrastructure.

Programmatic changes and trends: Based on competitive markets and inputs from Member States for continuous improvements in management systems, it is imperative to be at the forefront of necessary changes to adapt and meet future challenges relating to market economies. Subprogramme A.2 is currently addressing most of these trends and challenges. Thus, the basics of Subprogramme A.2 will remain unchanged but it will evolve to meet the possible new challenges in Member States as a result of greater deregulation and the need to address safety and security concerns in the industry.

Resource changes and trends: The proposed resources for Subprogramme A.2 amount to €1 270 500 in 2006, reflecting an increase in the budget of €44 800, or 3.7%, compared with 2005, with a decrease of €23 000, or 1.8%, in 2007 over 2006. The increase in 2006 reflects the emphasis on activities to strengthen national and regional nuclear power infrastructures as well as to strengthen and harmonize quality management systems. The decrease in 2007 reflects reduced activities in the area of achieving excellence in the performance of NPP personnel and in the area of strengthening and harmonizing quality management systems.

Financial resources (2005 prices)

A.2	2005	2006	2007
Reg. budg.	1 225 700	1 270 500	1 247 500

Projects

Project A.2.01: Strengthening and harmonizing quality management systems

Main outputs: New Safety Standards on management systems and the proceedings of a workshop on the application of effective management systems in nuclear installations and activities will be produced.

Duration: 2004–2009

Ranking: 1

Recurrent Project A.2.02: Strengthening national and regional nuclear power infrastructures

Main outputs: Technical documents addressing: nuclear power planning covering infrastructure development, phased out activities, project management and plant acquisition processes. A database on construction and startup experience will be maintained and performance indicators for construction and commissioning activities will be developed. Support will be provided to a range of technical cooperation projects.

Ranking: 1

Recurrent Project A.2.03: Achieving excellence in the performance of NPP personnel

Main outputs: Guidance and proven practices pertaining to the attitudes and professionalism of NPP personnel; effective methods for NPP personnel training, training and performance of NPP contractors, training for commissioning of NPPs; knowledge management; and quality management of NPP training programmes.

Ranking: 2

Subprogramme A.3. Coordination of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)

Rationale: Any major future increase in the use of nuclear power will depend to a large extent on continued innovation in reactor and fuel cycle technology — innovation focused on maximizing the benefits of nuclear power while minimizing the concerns associated with economic competitiveness, resources and waste management, safety, environmental impacts, proliferation resistance and physical protection. By making use of the great potential and added value achieved through cooperative efforts for the development of innovative nuclear energy systems (INS), nuclear energy can contribute to fulfilling energy needs in the 21st century in a sustainable manner. Member States can benefit by sharing information and knowledge, performing collaborative assessments and planning, and pooling resources for conducting cooperative research on INS. The Agency is uniquely positioned to provide, in addition to technological competence, expertise in safety, non-proliferation, energy planning and economic analysis, and also provide a global forum for cooperation involving both developing and industrialized Member States.

The Agency's INPRO initiative finds broad support from Member States through resolutions of General Conferences and the UN General Assembly in 2001, 2002 and 2003. Overall guidance, advice on planning and methods of work and review of the results achieved are provided by the INPRO Steering Committee. INPRO pursues cooperation with other international efforts focused on innovative technology development. For example, INPRO is represented as an observer at the Policy Group meetings of the Generation IV International Forum (GIF), experts from both INPRO and GIF participate in Agency meetings on proliferation resistance features of nuclear energy systems, and cooperation between INPRO and GIF in other areas is under discussion.

INPRO is divided into two phases. Phase I is projected to be completed in mid-2006 after producing reports on the validated methodology for assessment of INS in the areas of sustainability, safety, environment, waste management, proliferation resistance and security, infrastructure requirements, and the results of the assessments performed by Member States for the INS of their choice. Phase II brings together both technology holders and users to: consider jointly the actions required to achieve desired innovations in nuclear reactors and fuel cycles; elaborate the methodology for assessment of INS and establish it as an Agency recommendation; facilitate coordination and collaboration among Member States for planning of the development and deployment of INS on a regional and global scale; and assist interested Member States in their coordination of international efforts for sustainable development. Collaboration on INS assessment will include a process of in-depth systems analysis of the future role of nuclear energy on a regional and global basis.

Objectives: To achieve progress in the development of competitive, safe, environmentally benign and proliferation resistant innovative nuclear energy systems to meet the global energy needs of the 21st century in a sustainable manner through international information exchange, cooperative assessments and coordinated research.

Outcomes
— Increased international guidance and coordination for the development and deployment of INS and their applications.

Outcomes (cont'd)
— Use by Member States of guidance provided through the Agency on technology development for INS and on infrastructure development framework to support the deployment of INS worldwide.
Performance Indicators
— Number of INPRO Member States.
— Number of project publications distributed to representatives of Member States. — Percentage of positive replies from questionnaires on project publications.

Programmatic changes and trends: Due to the continued support expressed for INPRO by SAGNE, the Board of Governors and the General Conference, INPRO was raised to subprogramme level to reflect its importance. In 2006–2007, INPRO is expected to implement its Phase II with cooperative research under the auspices of the Agency, along with an in-depth systems analysis of the future role of nuclear energy for sustainable development on a regional and global basis.

Resource changes and trends: The proposed resources for Subprogramme A.3 amount to €306 700 in 2006, reflecting an increase in the budget of €109 800, or 55.8%, compared with 2005, with no change in 2007 compared with 2006. The increase is due to the high level of interest of Member States in innovative technologies and the need for international coordination of related R&D programmes. Most activities in this subprogramme depend on the availability of extrabudgetary funds.

Financial resources (2005 prices)

A.3	2005	2006	2007
Reg. budg.	196 900	306 700	306 700

Projects

Recurrent Project A.3.01: Development of requirements and guidance for innovative nuclear energy systems (INS)

Main outputs: Technical documents providing guidance on the assessment of INS and recommendations on changing the infrastructure to facilitate their deployment.

Ranking: 2

Recurrent Project A.3.02: Coordination of international activities for innovative nuclear energy systems (INS)

Main outputs: Publications on results of collaborative efforts of Member States for the development and deployment of INS.

Ranking: 1

Subprogramme A.4. Technology Development for Advanced Reactor Lines

Rationale: Continued technological advances are key to the future growth of nuclear power in interested Member States, and to its ability to provide sustainable, economically competitive power while meeting increasingly stringent safety requirements. Advances in competing fossil based technologies and the trend toward deregulated electricity markets mean that NPPs must be built in shorter times at lower capital costs, and they must be highly reliable and economical to operate. Sustainability goals require improvements in nuclear fuel utilization as well as investigations of actinide and long lived fission product transmutation. Continuous feedback from results achieved within basic science and technology will form an important element for the further improvement of advanced reactor lines. Member States can benefit from the sharing of information and knowledge, performing cooperative assessments, and pooling resources for conducting joint research in advanced reactor technology. Furthermore, all Member States interested in using nuclear energy need balanced and objective information on global advances in nuclear power technology.

The Agency is the only international organization that provides a global forum for collaboration involving both developing and industrialized Member States. This subprogramme brings together experts to pool R&D resources from national organizations towards agreed common goals. The global forum is provided through an existing structure of Technical Working Groups (TWGs) on major reactor lines (water cooled reactors, gas cooled reactors and fast reactors). The national representatives on these TWGs exchange information and discuss their activities, and identify areas in which they are interested to collaborate through the Agency. For the agreed activities, the representatives then ensure appropriate support from their national experts. Collaboration is in the form of information exchange and coordinated research. The Agency can make a special contribution to the needs of developing countries by facilitating information exchange and coordinated research in the areas of the enabling technologies common for small and medium sized reactors, which are highly suitable for countries with small electricity grids or low energy demand projections and for non-electric applications.

Objectives: To achieve progress in the development of advanced nuclear power technologies that have competitive economics and meet stringent safety objectives through international information exchange and coordinated research.

Outcome
— Use by Member States of information provided through the Agency on technology development for advanced reactors.
Performance Indicator
— Number of Member States reporting use of Agency provided information, expertise and the results of collaborative R&D projects.

Programmatic changes and trends: In 2006–2007, a new project on small and medium sized nuclear reactors (SMRs) will be included in Subprogramme A.4 to review common technologies and issues. Activities on SMRs are strongly supported by General Conference resolutions, and this new project will provide for efficient coordination of these activities with technology development activities for advanced reactor lines. The project on "Support for demonstration of nuclear seawater desalination" now forms part of Subprogramme A.5, "Support for non-electrical applications of nuclear power".

Resource changes and trends: The proposed resources for Subprogramme A.4 amount to €1 473 800 in 2006, reflecting a decrease in the budget of €147 700, or 9.1%, over 2005, with an increase of €29 000, or 2.0%, in 2007 over 2006. The decrease in 2006 results from a reduction of funds for some activities in the areas of technology advances for gas cooled reactors, common technologies and issues for SMRs and technology advances in fast reactors and accelerator driven systems — this last project also faces a decrease of funds in 2007. The overall increase in 2007 results from partial restoration of the decrease in the area of common technologies and issues for SMRs.

Financial resources (2005 prices)

A.4	2005	2006	2007
Reg. budg.	1 621 500	1 473 800	1 502 800

Projects

Recurrent Project A.4.01: Technology advances in water cooled reactors for improvements in economics and safety

Main outputs: A technical document on the results of the CRP on intercomparison of techniques for pressure tube inspection and diagnostics; an updated database on thermophysical properties for LWR and HWR materials, and PC based reactor simulator tools for education.

Ranking: 2

Recurrent Project A.4.02: Technology advances in fast reactors and accelerator driven systems

Main outputs: Technical documents on the status of research and development for fast reactor and accelerator driven systems and on comparative assessment of the dynamics and safety characteristics of transmutation systems as well as on results of studies on innovative reactor technology options for the effective incineration of radioactive waste (in conjunction with B.4). Another main output will be updated databases related to information on fast reactors and ADS technologies.

Ranking: 1

Recurrent Project A.4.03: Technology advances for gas cooled reactors (GCR)

Main outputs: Technical documents on advances in High Temperature Gas cooled Reactors (HTGR) fuel technology and HTGR potential for process heat applications, upgrading of HTGR knowledge database and personnel trained on status of HTGR technology.

Ranking: 2

Project A.4.04: Common technologies and issues for small and medium sized reactors (SMR)

Main outputs: Technical documents on: the development of enabling technologies common for SMRs of various types and on infrastructure issues that could facilitate their deployment in many developing and industrialized countries.

Duration: 2004–2009

Ranking: 1

Subprogramme A.5. Support for Non-Electric Applications of Nuclear Power

Rationale: Currently nuclear power contributes approximately 16% of the world's electricity. However, most of the world's energy use is for heat and transportation. Nuclear energy has the potential to make a significant contribution to these areas by providing a clean and sustainable source of energy. Co-generation has the additional benefit of significantly boosting the thermal energy utilization efficiency of NPPs.

Utilization of nuclear energy for the production of freshwater from seawater (nuclear desalination) has been drawing broad interest in Member States as a result of acute water shortages in many arid and semi-arid zones worldwide. The desalination of seawater using nuclear energy (low temperature heat or electricity) is a demonstrated option, which could help meet the growing demand for potable water.

Hydrogen as an energy carrier is also receiving increasing attention both in industrialized countries and in developing countries, and nuclear energy is well placed as an efficient and clean source of energy for its production. Activities are being pursued in several Member States to realize hydrogen's

potential in solving energy security, diversity and environmental needs. Member States can benefit from sharing information and knowledge and pooling resources for conducting collaborative research on the production of hydrogen with nuclear energy. Such collaboration, as well as promotional activities, can facilitate the movement from today's fossil based energy economy to a future sustainable hydrogen oriented economy with fuel cell energy converters.

SAGNE has noted that nuclear hydrogen production has become of great interest as an energy carrier, and has stated that the Agency should "show leadership in this arena, which offers the opportunity to couple hydrogen production with nuclear power in a sustainable way".

Objectives:

— To increase the capability of Member States faced with acute water scarcity problems and interested in deploying nuclear desalination for alleviating these problems, in launching feasibility studies, performing economic evaluations and establishing nuclear desalination demonstration projects.

— To achieve progress in nuclear hydrogen production and other high temperature processes and applications and in planning associated development and demonstration projects through information exchange, cooperative assessments and collaborative research among interested Member States.

Outcome
— Use by Member States of information provided by the Agency on non-electric applications of nuclear energy, and on the means of safely and economically coupling the production systems with nuclear reactors.
Performance Indicators
— Number of Member States using Agency provided information and expertise on non-electric applications of nuclear energy. — Number of Member States collaborating through the Agency to share information and to conduct collaborative R&D on the use of nuclear energy for non-electric applications.

Programmatic changes and trends: This subprogramme includes activities on nuclear desalination (earlier included in Subprogramme A.4) and other non-electric applications, especially nuclear hydrogen production. The inclusion of nuclear hydrogen production was suggested by SAGNE during its March 2004 meeting. SAGNE suggested that nuclear hydrogen production should be given higher visibility in the Agency's programme and budget and recommended that the Agency organize a TWG on this subject. The application of nuclear heat for various other industrial applications such as coal gasification, production of synthetic liquid fuels and heavy oil recovery have been of interest for many years and will also be reviewed within this new subprogramme.

Resource changes and trends: The proposed resources for Subprogramme A.5 amount to €532 000 in 2006, reflecting an increase in the budget of €90 800, or 20.6%, compared with 2005, with a decrease of €29 000, or 5.5%, in 2007 over 2006. The increase in 2006 results from inclusion of a new project on nuclear hydrogen production, while the decrease in 2007 results from a reduction of funds for some activities in the area of support for demonstration of nuclear seawater desalination.

Financial resources (2005 prices)

A.5	2005	2006	2007
Reg. budg.	441 200	532 000	503 000

Projects

Project A.5.01: Support for demonstration of nuclear seawater desalination

Main outputs: Improvements to the DEEP (desalination economic evaluation programme) computer code and a report on the socioeconomic and environmental aspects of nuclear desalination and on economic research and assessment of selected nuclear desalination projects and case studies; personnel trained in nuclear desalination technologies and economic evaluation; and publication of the proceedings of a symposium on Non-electric Applications of Nuclear Power: Seawater Desalination, Hydrogen Production and other Industrial Applications.

Duration: 2001–2007

Ranking: 2

Recurrent Project A.5.02: Nuclear hydrogen production

Main outputs: A technical document on design and safety approaches for the coupling of hydrogen production systems with nuclear reactors and publication of the proceedings of a symposium on Non-electric Applications of Nuclear Power: Seawater Desalination, Hydrogen Production and other Industrial Applications.

Ranking: 1

Programme B. NUCLEAR FUEL CYCLE AND MATERIALS TECHNOLOGIES

Rationale: General Conference resolutions GC(45)/RES/12.F, GC(46)/RES/11.C and GC(47)/RES/10.C request Member States to combine their efforts under the aegis of the Agency in considering the issues of the nuclear fuel cycle, in particular by examining innovative, safe, economically competitive and proliferation resistant technologies.

With nuclear energy currently having an important share in energy production and the expectations for nuclear to play a greater role, it is imperative that nuclear fuel cycle activities meet all requirements related to economics, safety, environment, security and non-proliferation.

There are various issues challenging these requirements, and hence the sustainability of the nuclear fuel cycle. These include, for example, price fluctuations of the raw materials for the fuel cycle, efficiency in fuel use, storage capacity for steadily increasing quantities of spent fuel, liabilities associated with the retirement and decommissioning of nuclear fuel facilities, potential proliferation risks from civil plutonium utilization and associated security concerns, and insufficiently trained staff.

Also, legacies from the cold war period involving nuclear fuels and materials still need to be resolved. Examples are the dismantling of nuclear submarine reactors and the disposition of ex-weapons fissile materials in the civil nuclear fuel cycle.

There are also political and social factors that tend to erode public confidence in nuclear fuel cycle activities and nuclear power in general, and thus influence the sustainability of the nuclear fuel cycle and power programmes, e.g. in the deployment of adequate solutions in the back end of the cycle.
With many nuclear fuel cycle facilities reaching the end of their lifetime, decisions will have to be taken on new facilities to be built, their extension of capacity and lifetime, or even closure and dismantling in some cases. Some countries have already taken such decisions and started or completed implementation. Insight into the sustainability of nuclear energy, and its supporting nuclear fuel cycle in particular, requires a reliable information base and analysis of that information within the context of the entire fuel cycle and of the associated materials management. Such insight is equally as important for Member States having a stake in nuclear energy as for an organization expected to be a reliable, independent and authoritative source of information, namely the Agency.

Of strategic importance is the development of a comprehensive system model and common understanding of global nuclear power and the fuel cycle in the light of growing energy needs, innovation prospects, increased proliferation concerns and uneven progress in back end solutions (e.g. development of spent fuel and high level waste repositories).

It is a certainty that spent fuel will continue to accrue, creating increased pressure for decisions to be taken by Member States about what to do with it. Appropriate management of the steadily increasing quantity of spent fuel arisings is thus a key issue for the steady and sustainable growth of nuclear energy. More than four hundred nuclear power reactors are in operation today and have already accumulated a large amount of spent fuel stored either at or away from the reactor sites. The importance of the Agency's involvement in the management of spent fuel from power reactors has been noted on several occasions in meetings of the Board of Governors and is reflected in the Medium Term Strategy.

Member States have referred to storage periods of 100 years and even beyond, and as storage periods extend, new challenges arise in the institutional as well as in the technical areas. From the institutional point of view, challenges reside for instance in the management of liabilities and knowledge, experience and information to be carried over during longer time spans and several generations of personnel involved in spent fuel management. From the technical point of view, challenges are associated with the longevity of spent fuel and packages and the behaviour of structural materials of storage facilities.

There is a need to improve nuclear fuel cycle efficiency and safety, optimize the use of materials (including re-use of materials such as depleted uranium, high enriched uranium, ex-weapons materials, stocks from reprocessing and minor actinides), mitigate proliferation risks and security concerns, and environmental concerns and impacts. Evolutionary, advanced and innovative fuel cycle technologies are seen as a way forward to address the afore-mentioned cross-cutting aspects and to overcome the concerns these aspects imply.

The nuclear fuel cycle has received special attention within the United Nations system (e.g. in the Millennium Declaration) and other international organizations (e.g. OECD/NEA) in terms of international cooperation for development. Partnership with other UN system organizations and

international bodies (such as OECD/NEA and WNA) have also resulted in synergy in the outcomes.

National and international organizations involved in the energy and environmental sectors, fuel cycle services (governmental and private), operators of nuclear facilities (from mining, through reactor operation to storage and disposal of waste), R&D organizations, academia and the scientific and technical media with an interest in the nuclear fuel cycle are among the target groups of this programme.

The programme is intended to play a catalytic role in the issues mentioned above by fostering and promoting exchange of information and experience, analysis of information, best practices and cooperation among Member States having a stake in sustainable nuclear fuel cycle activities.

Objective: To strengthen the capabilities of interested Member States for policy making, strategic planning, technology development and implementation of safe, reliable, economically efficient, proliferation resistant, environmentally sound and secure nuclear fuel cycle programmes.

Outcome
— Use in interested Member States of the Agency's recommendations, guidance and information leading to enhanced competence to conduct sustainable nuclear fuel cycle activities, including R&D, and to address urgent issues in the nuclear fuel cycle.
Performance Indicator
— Evidence of relevance for members of target groups in Member States and Agency entities of information, guidance, methods and procedures provided by the programme in the areas of nuclear fuel cycle technology and materials management.

Specific criteria for prioritization:

— First priority is given to: (i) those projects that respond to recommendations or requests made by the General Conference in its resolutions or that address prerequisites for General Conference resolutions; (ii) projects to be implemented in cooperation with other intergovernmental organizations and agencies (e.g. UN organizations).

— Second priority is given to projects that are carried out at the request of groups of Member States, thus directly reflecting Member State priorities (e.g. Advisory Groups, TWGs).

— Third priority is given to projects that are essential for programme implementation and the achievement of programme objectives and/or other Agency programmes.

Subprogramme B.1. Information and Analysis of the Nuclear Fuel Cycle and Materials Management

Rationale: To foster the exchange of information is, according to Article III of the Statute, one of the functions of the Agency. The availability of accurate (and relevant) information is fundamental to acquiring the appropriate understanding and insight into the technically complex issues in the fuel cycle. In order to implement this function, this subprogramme will make available and maintain authoritative and reliable information on the policies and status and trends in nuclear fuel cycle programmes worldwide. To do so the Agency must maintain a system of information gathering, retention, analysis and dissemination that is available to Member States and other Agency entities with an interest in the subject. The issue of making authoritative information available on the nuclear fuel cycle is particularly important in view of the implications of a number of conventions signed and ratified by Agency Member States, for example, the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Waste Management and the Convention on Access to Information, Public Participation in Decision Making and Access to Justice in Environmental Matters (the Aarhus Convention).

Activities in the nuclear fuel cycle are closely related to nuclear power generation and nuclear material (such as uranium, plutonium and minor actinides) management. This is particularly important from the point of view of sustainability and energy security in the nuclear power sector on a global scale. A holistic approach to fuel cycle systems and nuclear materials management is therefore necessary to respond to the diversified needs of Member States, bearing in mind future developments and innovative reactor and fuel cycle systems.

Databases and conceptual models will be maintained, updated, revised, and, when appropriate, combined, integrated or linked with other databases from the Agency or other international bodies (e.g. OECD/NEA to maximize synergies and facilitate consistency among data sets.

Dissemination will be carried out through periodic and topical reports to be published in paper and electronic formats.

Against this background, this subprogramme puts emphasis on improving the efficiency of the Agency's information platforms and networks focusing on entire fuel cycle systems and nuclear materials management, and on remaining a global authoritative and independent source of quality information and analysis of the nuclear fuel cycle worldwide.

Target groups for this subprogramme are policy makers and analysts, national authorities, fuel cycle service organizations, research bodies and other Agency entities.

Objectives:

— To enhance the capability of Member States to understand, plan and develop nuclear fuel cycle programmes and activities through the use of information and analyses of the fuel cycle and the various options and concepts as provided by the Agency.

— To render more relevant and efficient the programmatic activities of other Agency entities when dealing with nuclear fuel cycle materials management, programmes and strategy issues in their own specific subject areas and programme activities directed towards Member States.

Outcomes
— Increased use by Member States and other Agency entities of the Agency's nuclear fuel cycle materials information systems.
— Increased reliability of Agency's nuclear fuel cycle information systems.
Performance Indicators
— Evidence that use is being made by target groups in Member States of the information, analysis and information systems provided by the Agency in the area of the nuclear fuel cycle and nuclear materials management.
— Evidence of in-house accessible and available operational information systems with new and updated information on the nuclear fuel cycle and nuclear fuel cycle materials.

Programmatic changes and trends: Subprogramme B.1 has been renamed "Information and Analysis of the Nuclear Fuel Cycle and Materials Management" to emphasize the importance of information on the nuclear fuel cycle. It is mainly a merger of former projects B.1.01 "Assessing uranium resources and projecting supply and demand" and B.4.03 "Maintaining and updating nuclear fuel cycle information systems". Former Project B.1.02 "Promoting best practices in uranium production to support sustainability and minimize environmental impacts" will be phased out by the end of 2005. The new subprogramme will focus on improving the efficiency of the Agency's information platforms and networks related to entire fuel cycle systems and nuclear materials management. A holistic approach to fuel cycle systems and nuclear material management will be adopted in response to Member States' diversified needs in those areas.

Resource changes and trends: The proposed resources for Subprogramme B.1 amount to €739 600 in 2006, reflecting a decrease in the budget of €37 700, or 4.9%, compared with 2005, and remain approximately at the same level in 2007. The decrease results from the transfer of a post that will no longer be needed in the area of raw materials to the area of highest priority, i.e. research reactors (Subprogramme D.2), partly offset by an increase in resources needed to consolidate the databases on the nuclear fuel cycle in Project B.1.01, as well as to enhance communication on and analysis of nuclear fuel cycle data.

Financial resources (2005 prices)

B.1	2005	2006	2007
Reg. budg.	777 300	739 600	738 700

Projects

Recurrent Project B.1.01: Maintaining and improving information on the nuclear fuel cycle

Main outputs: The project will result in the following updated nuclear fuel cycle related databases and information systems: Nuclear Fuel Cycle Information Systems (NFCIS), World Distribution of Uranium Deposits (UDEPO), Database on Minor Actinide Properties (MADB), publication of Red Book 2005 (in 2006), draft of Red Book 2007 and periodic reports based on the information stored in databases.

Ranking: 1

Project B.1.02: Enhancing communication on and analysis of the nuclear fuel cycle

Main outputs: A web based assessment, Nuclear Fuel Cycle Simulation System, will be developed and provided for the use of Member States through the internet. The following technical documents will be produced: uranium production economics, full cost accounting and the reliability of market based production, uranium supply and demand analysis, updated version of Uranium Supply to 2050; revision of Communications: A Handbook for Guiding Good Communications Practices at Nuclear Fuel Cycle Facilities.

Duration: 2005–2009

Ranking: 2

Subprogramme B.2. Nuclear Power Reactor Fuel Engineering

Rationale: Optimized use and reliable performance of nuclear fuel and fuel assemblies in the water cooled power reactor core are major factors for the sustainability of nuclear energy. Optimized use implies the improvement of fuel cycle economy and plant availability, which currently is achieved by advanced fuel and core designs and more demanding

operational strategies (e.g. extended burnup, longer fuel residence time, higher thermal rates), while still satisfying appropriate safety margins. With regard to fuel reliability, there is an incentive to achieve lower failure rates, greater operational flexibility and operation within appropriate margins for normal, transient and accident conditions.

To address these issues, degradation mechanisms and their impact on structural and fuel materials, for example radiation induced embrittlement, hydriding, and corrosion, are being investigated and developed. High burn up properties are also being studied, as are technologies. New characterization and examination techniques (e.g. 3-D tomography, neutron sources and refabrication and instrumentation) and the underlying fundamental scientific developments are important methods in this field since they enable more accurate and/or reliable data and observation on material properties and their modifications. Information gathered in this way is used to develop an understanding of the processes occurring in irradiated fuel and to allow accurate modelling of behaviour under operational conditions.

The Agency is the only independent and non-commercial organization that provides a forum for exchange of experience and promotion of best practices on technical/scientific and safety aspects of the use and reliability of nuclear fuel and fuel assemblies. It is also well placed to promote the harmonization of fuel performance related technologies and associated QA/QC.

This subprogramme focuses on exchange of information, for example on performance and modelling in normal, transient and accident conditions. It is concerned with work on advanced fuel and evolutionary reactor and fuel assembly designs. It also deals with the sharing of practical experience and best practices in fuel utilization, fuel related technologies and engineering methods.

Regional cooperation in the field of harmonization of fuel related technologies is particularly relevant in Europe, with power reactors of different designs aiming to reach comparable standards, including those of performance with regard to economics and safety. The lessons learned may well become a reference for Member States that operate or plan to operate reactors of different design.

Those interested in the activities on fuel performance and technology in this subprogramme include fuel designers, research establishments, plant operators and regulatory bodies in industrialized countries and research establishments in countries considering the use of nuclear power.

Objective: To improve, through the transfer of information and by sharing experience, the capability of interested Member States to optimize in-pile fuel performance, and to develop advanced technologies for ensuring reliability and economic efficiency in nuclear fuel utilization, while satisfying appropriate safety margins.

Outcomes
— Use in interested Member States of information provided by the Agency, and the experience exchanged, to gain a better, quantitative understanding of the mechanisms of in-pile behaviour of fuel, core and coolant circuit components in normal, transient and accident conditions and the use of this understanding in improving fuel performance.
— Improvements in the methodology for design, fabrication and safe utilization of current and advanced fuel in Member States with different reactor designs on the basis of information provided by the Agency and experience exchanged.
Performance Indicators
— Evidence of organizations in Member States relying on, or considering, advanced technology for improving power reactor core and primary circuit material performance for enhanced utilization, economics and reliability of the fuel, on the basis of information provided by the Agency.
— Ability of Member States with different reactor systems to understand and model fuel behaviour in other systems on the basis of information and experience made available by the Agency. — Extent of dissemination/harmonization of advanced methodologies for water reactor fuel design, fabrication and utilization, in interested Member States, on the basis of information and experience made available by the Agency.

Programmatic changes and trends: So far, the Agency's activities on fuel performance and technology have focused on information exchange on the development of fuel and coolant technologies for NPPs. In 2006–2007 this subprogramme will place more emphasis on harmonization of advanced methodologies for fuel design, fabrication and utilization among Member States with different reactor designs. Access to advances in core corrosion monitoring and control, and in validation and verification of national fuel performance codes, will be provided for interested Member States through CRPs on data processing technologies and diagnostics for water chemistry and corrosion control (DAWAC) and fuel modelling at extended burnup (FUMEX-II), respectively.

Resource changes and trends: The proposed resources for Subprogramme B.2 amount to €538 400 in 2006, reflecting an increase in the budget of €11 700, or 2.2%, compared with 2005, with a further increase of €5 600, or 1.0%, in 2007 over 2006. The increase over 2005 is mainly needed

to cover the costs of the international symposium on MOX fuel, plutonium recycle and fuel cycle experience, which will be held in 2006.

Financial resources (2005 prices)

B.2	2005	2006	2007
Reg. budg.	526 700	538 400	544 000

Projects

Project B.2.01: Supporting the sharing of experience in the development and use of fuel structural materials and water chemistry management in nuclear power plants

Main outputs: A monograph on the structure, properties, corrosion and impact of irradiation on Zr based alloys will be published for scientists and engineers working in the area of technology, nuclear application and development of new Zr based alloys.

Duration: 2004–2010

Ranking: 2

Project B.2.02: Promoting good fuel performance and operating practice for current fuel types in water cooled power reactors

Main outputs: Three reports will be issued covering the state of the art of water reactor fuel performance and technology, factors influencing fuel reliability/failure rates of BWR/PHWR/PWR/ WWER fuel assemblies, and high burnup fuel experience and economic impact. These will represent a comprehensive set of information and references allowing fuel designers and plant operators to increase the performance of specific nuclear fuels and fuel assemblies in existing power plants.

Duration: 2002–2009

Ranking: 2

Project B.2.03: Promoting best practices in fuel design and manufacturing and the implementation of new fuel types

Main outputs: A report on the use of advanced technologies for fuel fabrication and QC will be published in 2007. Reports on hot cell and poolside inspection techniques and on improved fuel pellet materials and designs will be prepared in 2007.

Duration: 2006–2009

Ranking: 1

Subprogramme B.3. Management of Spent Fuel from Nuclear Power Reactors

***Rationale*:** Spent fuel from nuclear power reactors requires safe, secure, environmentally sound and efficient management. It is a certainty that with the number of power plants planned to be used spent fuel will continue to accrue. Appropriate management of increasing spent fuel arisings is thus a key issue for the steady and sustainable growth of nuclear energy. More than four hundred nuclear power reactors are in operation today and have already accumulated a large amount of spent fuel stored either at or away from the reactor sites. The importance of the Agency's involvement in the management of spent fuel from power reactors has been noted on several occasions in meetings of the Board of Governors and is reflected in the Medium Term Strategy.

With the lack of operational spent fuel and high level waste repositories, and a majority of Member States still to decide about the ultimate solution and destination for spent fuel arisings, "long term storage is becoming a progressive reality" as was concluded at a conference on storage of spent fuel from power reactors. Consequently, in many countries with nuclear power plants the major current issue in the area of spent fuel management is the need to expand existing capacities at reactor sites or to provide additional storage space to accommodate upcoming spent fuel arisings. Member States have referred to storage periods of 100 years and even beyond, and as storage periods extend, new challenges arise in the institutional as well as technical area. From the institutional point of view, there are challenges in the management of liabilities and knowledge, experience and information over longer time spans and several generations. Technical challenges include the longevity of spent fuel packages and behaviour of structural materials of storage facilities. Conversely, several Member States are considering taking nuclear power plants out of service in the very near future. Consequently, spent fuel storage facilities on reactor sites would need to be decommissioned in several of these cases.

Fostering the application of good practices and sharing of experience in addressing these issues from institutional and technical perspectives is a particularly relevant task for the Agency to discharge its responsibility and function according to its Statute (Article III, A/3). In addition, signatory countries of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management can take advantage of the Agency's efforts to foster the application of good practice in the spent fuel management area.

This subprogramme is intended to play a catalytic role for cooperation among Member States through, inter alia, the collection, evaluation and sharing of information on the current status, good practices and experience in spent fuel management and to aid Member States in the planning and implementation of their national programmes for spent fuel management. Regional cooperation and approaches are seen to provide attractive and challenging

prospects for Member States, for instance from the economic, safety, environmental and security points of view.

Target groups include power reactor operators, regulators, designers and waste management organizations in all Member States with power reactors, particularly developing Member States and those in Eastern and Central Europe.

Objective: To improve the capability of interested Member States to plan, develop and implement safe and efficient spent fuel management by the identification and mitigation of the associated problems, using information and guidance provided by the Agency.

Outcomes
— Increased use by Member States with nuclear power plants of Agency guidance in the planning or implementation of national programmes for power reactor spent fuel storage and/or management. Improved implementation of spent fuel management programmes in Member States.
— Improved cooperation between Member States in sharing information and collaborating on spent fuel management.
Performance Indicators
— Evidence of Member States benefiting from Agency spent fuel management activities, using information or guidance by the Agency for the planning or implementation of state of the art technologies in spent fuel storage facilities or improving spent fuel storage and management conditions.
— Number of Member States benefiting from Agency spent fuel management activities, using information or guidance by the Agency for the planning or implementation of state of the art technologies in spent fuel storage facilities or improving spent fuel storage and management conditions.

Programmatic changes and trends: This subprogramme has focused so far on the management and technology of interim spent fuel storage. The amount of spent fuel requiring storage is increasing and the storage duration is being prolonged owing to delays in the opening of repositories. To address these trends, this subprogramme now emphasizes the development of guidance and information exchange on methods to increase the capacity of existing facilities and to accommodate extended interim storage durations. With increased storage duration, the issues of knowledge and information maintenance and long term behaviour of structural materials of the storage facilities will be addressed where appropriate.

Resource changes and trends: The proposed resources for Subprogramme B.3 amount to €520 800 in 2006, reflecting a decrease in the budget of €14 100, or 2.6%, compared with 2005, with a further decrease of €4 200, or 0.8%, in 2007 over 2006, reflecting minor adjustments in expected budgetary requirements.

Financial resources (2005 prices)

B.3	2005	2006	2007
Reg. budg.	534 900	520 800	516 600

Projects

Recurrent Project B.3.01: Promoting technologies and strategies for spent fuel management

Main outputs: A technical document on technical and institutional aspects of regional spent fuel storage facilities, including potential benefits and risks.

Ranking: 1

Project B.3.02: Providing technical guidance on good practices for long term storage of spent fuel

Main outputs: Technical documents on: the requirements, practices and development of burnup credit application; data requirement and maintenance of records for spent fuel management; and the influence of fuel design (in particular for high burnup, MOX fuel and advanced reactor operation) for subsequent spent fuel storage; guidance on the preparation and maintenance of data for various technical and institutional issues associated with long term storage. The proceedings of the international conference on storage of spent fuel from power reactors will provide the latest information about the spent fuel storage situation in Member States as well as directions for further developments.

Duration: 2002–2009

*Ranking***:** 1

Subprogramme B.4. Topical Nuclear Fuel Cycle Issues

Rationale: The sustainability of nuclear power, including its acceptance as a reliable, clean and economically competitive energy source requires increased efforts to address challenges to optimize, improve technologies, and to address issues and concerns of a cross-cutting nature. Technical issues of a cross-cutting nature are: the need to improve nuclear fuel cycle efficiency and safety; the need to optimize the use of materials in relation to the nuclear fuel cycle (including re-use of materials) such as depleted uranium, high enriched uranium, ex-weapons materials, stocks from reprocessing and minor actinides); and the need to mitigate proliferation risks and security concerns, as well as environmental concerns and impacts.

Evolutionary, advanced and innovative fuel cycle technologies are seen as a way forward to address the aforementioned cross-cutting aspects and to overcome the concerns these aspects imply. These technologies call for more fundamental and scientific research efforts and are seen as areas in which the Agency is best placed, according to Article III, A.1 of its Statute, to foster international cooperation.

Also, legacies from the past still raise concerns from the safety and security points of view and can best be resolved through international cooperation. Examples are the disposition of ex-weapons materials and the dismantling of nuclear submarines.

The Agency will focus its efforts within this subprogramme on the transfer of information and experience and fostering of cooperation in nuclear fuel cycle issues addressing cross-cutting concerns in Member States and requiring cross-cutting approaches in the Agency.

Target groups for this subprogramme are policy makers and analysts, national authorities, fuel cycle service organizations, research bodies and other Agency entities.

Objectives:

— To improve, through transfer of information and sharing of experience, the understanding and capabilities of interested Member States to address specific issues and technologies associated with the nuclear fuel cycle, particularly those that are of a cross-cutting nature.

— To render more efficient the programmatic cross-cutting activities shared with other Agency entities dealing with or involving nuclear fuel cycle (through sharing of information).

Outcome
— Use in interested Member States of the information and technology insights provided by the Agency for planning improvements, from a sustainability point of view, and acceptance of specific aspects and technologies of their nuclear fuel cycle activities.
Performance Indicator
— Evidence that use is being made by target groups in Member States of the technologies and experience, analysis and information systems provided by the Agency in the area of nuclear fuel cycle and nuclear materials management.

Programmatic changes and trends: Subprogramme B.4 is now titled “Topical nuclear fuel cycle issues” and consists of former projects B.4.01 “Facilitating innovative nuclear fuel cycle technologies for sustainability”, B.4.02 “Promoting solutions of nuclear fuel cycle issues, and B.4.04 “Materials management for different nuclear fuel cycle options”. The new subprogramme will concentrate on information exchange and technology transfer related to very specific nuclear fuel cycle issues as well as aspects and materials of the fuel cycle that require a cross-cutting approach (innovative fuel cycle technologies, re-use of materials, proliferation resistance, environmental concerns, knowledge management, etc.).

Resource changes and trends: The proposed resources for Subprogramme B.4 amount to €584 700 in 2006, reflecting a decrease in the budget of €8 700, or 1.5%, compared with 2005, and remain essentially unchanged in 2007.

Financial resources (2005 prices)

B.4	2005	2006	2007
Reg. budg.	593 400	584 700	584 200

Projects

Project B.4.01: Supporting enhancement of nuclear fuel cycle materials processing and management technologies

Main outputs: A technical document on the current status and future prospects of gas cooled reactor fuels, and a technical document on process and property of minor actinide compounds and alloys for nuclear fuel and targets for incineration in thermal and fast neutron spectra. A technical report of a workshop on dry and pyro-processing for the treatment of spent fuel will be prepared.

Duration: 2004–2010

Ranking: 2

Project B.4.02: Providing insight for and support in addressing proliferation resistance in the current and future nuclear fuel cycle and materials management

Main outputs: Two technical documents will be produced on proliferation resistant aspects of transuranium elements as material and technical barriers, and on nuclear material management strategies.

Duration: 2002–2010

Ranking: 1

Programme C. CAPACITY BUILDING AND NUCLEAR KNOWLEDGE MAINTENANCE FOR SUSTAINABLE ENERGY DEVELOPMENT

Rationale: All plausible long term energy scenarios project significant and continuing expansion of energy demand worldwide, especially if the Millennium Declaration on poverty eradication and the Plan of Implementation agreed at the World Summit on Sustainable Development (WSSD) are to be met. Consequently, the demand for energy is projected to grow fastest in developing countries. Member States need to develop or enhance the indigenous capacity for comprehensive energy system planning consistent with their national sustainable development objectives. Requests for assistance to that extent are routinely forthcoming.

Nuclear energy is expected to play a greater role in meeting future energy requirements. The current and prospective concentration of nuclear expansion in developing countries emphasizes the need for nuclear capacity building in these countries, especially those contemplating the introduction of nuclear power over the coming decades. In addition to comprehensive energy system modelling, and planning, capacity building in the nuclear context embraces all activities required to support informed decision making on all issues surrounding the full life cycle of nuclear power. This includes aspects ranging from national energy demand and supply planning including energy demand and supply options, to technology, fuel cycles, waste management, economics, environment, safety and non-proliferation.

All these aspects reflect one common requirement, i.e. the need to ensure continuity and further development of nuclear knowledge and information transfer. This is particularly important because at the dawn of the 21st Century information and knowledge have become one of society's fundamental resources and human-made assets. Nuclear knowledge management, the International Nuclear Information System (INIS) and the IAEA Library are instruments in preserving and enhancing these assets.

Retaining the nuclear option for Member States that wish to use it necessitates the preservation and maintenance of the accumulated knowledge in nuclear science and nuclear industry. It also requires the development of systems and approaches for knowledge delivery to, and knowledge sharing among, Member States. A number of Member States have expressed their concerns about the ageing of the human workforce in the nuclear sector and the sharp decline in the number of new entrants to education and training in nuclear science and engineering.

Scientific and technical information is a strategic resource for the implementation of Agency programmes. The Secretariat develops in-house information resources and systems and acquires external information resources needed in support of programmatic activities. There are clear opportunities to increase the synergy among in-house nuclear information resources, and a further opportunity to use these resources as a basis for expanded partnerships and exchanges of information with and among Member States. An integrated approach to identifying, selecting, evaluating, processing and delivering these resources and services to Member States and Secretariat staff will facilitate efficient and effective nuclear knowledge management.

Objectives:

— To enhance the capacity of Member States to perform their own analyses of electricity and energy system development, energy investment planning and energy–environment policy formulation and their economic implications.

— To sustain and effectively manage nuclear knowledge and expertise.

— To enhance information and knowledge resources on the peaceful uses of nuclear science and technology serving the needs of Member States and the Secretariat.

Outcomes
— Increased reliance of energy policies and investment decisions in Member States, particularly in developing countries and countries with economies in transition, on Agency methodological tools.
— The Agency regarded by Member States and international organizations as an objective, wide-ranging and continuously improving source of quality information on nuclear energy and its peaceful applications, and the expertise required for nuclear knowledge maintenance and preservation.
Performance Indicators
— Number of Member States using the Agency's assessments and analysis tools related to energy system and investment planning or energy–environment policy formulation and their economic implications. — Number of cooperative ventures, presentations and other interactions of the Agency with other international organizations.

Performance Indicators (cont'd)
— Number of Member States satisfied with the availability and quality of nuclear knowledge and information services with direct or indirect impacts on their national nuclear programmes.
— Level of access and use of information resources and services.

Specific criteria for prioritization:

— First priority is given to projects directly related to General Conference resolutions.

— Second priority is given to projects requested by individual or groups of Member States.

— Third priority relates to projects in support of the above.

Subprogramme C.1. Energy Modelling, Databanks and Capacity Building

Rationale: Designing appropriate energy strategies to support sustainable development in a country entails comprehensive evaluation of energy supply and technological options in terms of their social, economic and environmental impacts. With increasing globalization and regional integration, such an evaluation has to include regional development possibilities beyond national borders. All this requires reliable data and information, appropriate analytical tools and adequately trained personnel. Many Member States, particularly in developing countries and in countries with economies in transition, lack local expertise and experience in these areas.

Echoing the agreements at the WSSD (Johannesburg, 2002), General Conference resolutions have emphasized the need for capacity building in developing countries for, along with other areas, sustainable energy development, nuclear energy planning and assessing the role of nuclear power for mitigating greenhouse gas emissions. Accordingly, Subprogramme C.1 is designed to provide the necessary data and up to date information and suitable analytical tools, and to build local capabilities so that Member States can carry out energy studies for elaborating their sustainable energy strategies and making sound policy decisions.

Objective: To strengthen capabilities in Member States to elaborate their sustainable energy strategies and conduct studies for energy sector development and management, energy investment planning and energy–environment policy formulation.

Outcome
— Utilization of Agency databank and analysis tools, experts trained in the use of these tools to conduct independently comprehensive energy–environment analyses.
Performance Indicators
— Number of requests for Agency databases and analytical tools (models) by Member States and other international organizations. — Number of experts from Member States trained in the use of Agency energy models.

Programmatic changes and trends: The activities under this subprogramme will continue to focus on building capabilities in Member States for addressing energy and sustainable development issues to include new opportunities expected from technological advancements and innovations as well as from increasing globalization and regional integration. Full fuel cycle and material flow accounting will also be included in the current set of analytical tools and databanks to allow the evaluation of different degrees of regionalization of various aspects of the nuclear fuel cycle.

Resource changes and trends: The proposed resources for Subprogramme C.1 amount to €1 340 200 in 2006, showing a decrease of €27 900, or 2.0%, compared with 2005, with no change in 2007 compared with 2006. The decrease reflects efforts to reduce costs through the extended use of ICTP facilities for implementation of training courses.

Financial resources (2005 prices)

C.1	2005	2006	2007
Reg. budg.	1 368 100	1 340 200	1 340 200

Projects

Recurrent Project C.1.01: Energy, electricity and nuclear power economics; databanks on status and trends

Main outputs: Updated databanks containing information on energy and electricity supply and demand patterns; data on technical, economic (including externalities), environmental and human health parameters of various energy technologies, specifically nuclear power, covering full energy chains; time series data on Indicators for Sustainable Energy Development (ISED); annually updated information on status and trends of energy and electricity supply and demand patterns, availability of energy resources, technology developments and economics; updated projections on energy and electricity use and nuclear power development in different world regions; and information for the *Nuclear Technology Review*. It will also provide data for updating internal and external web sites.

Ranking: 1

Recurrent Project C.1.02: Models for analysis and capacity building for sustainable energy development

Main outputs: Enhanced analytical tools (models) for elaborating sustainable energy strategies, applicable in widely diverse country situations. The support provided for technical cooperation projects will result in trained experts in Member States who can use Agency tools, and train other professionals in their countries, and national studies providing information to decision makers.

Ranking: 1

Subprogramme C.2. Energy Economy Environment (3E) Analysis

Rationale: General Conference resolutions have called for more active Agency involvement in the debate on nuclear power and its contribution to sustainable development. The Agency, the only UN institution actively pursuing studies on nuclear technologies and sustainable development, with its broad based membership representing a wide range of views and concerns about nuclear technology, is uniquely qualified to undertake 3E analysis against the backdrop of a constantly shifting balance among social, economic and environmental priorities — the three pillars of sustainable development.

Objective: To achieve better understanding of nuclear technology's contributions to socioeconomic development and climate protection and its compatibility with national sustainable development objectives in Member States.

Outcomes
— Agency considered by Member States and other international organizations as a competent partner in addressing sustainable energy development issues and as an objective and up to date source of information on nuclear technology in the context of sustainable energy and economic development. — Improved decision making in Member States about technology choices and sustainable development strategies.
Performance Indicators
— Number of instances where Agency economic or 3E analyses are requested, or incorporated into the decision making process of Member States or other agencies or offices.
— Number of requests for analysis, expertise or contributions from Member States to the sustainable development or climate change forums.

Programmatic changes and trends: The activities in this subprogramme will continue to focus on keeping the nuclear option open as appropriate in Member State sustainable development strategies. One new emphasis will be on more targeted economic assessments of various aspects of nuclear technologies and their potential for future contributions to sustainable development. The second will be on translating more specifically into Member State sustainable development strategies, the outcomes of international climate change and sustainable development negotiations, particularly as these relate to the future contribution of nuclear power in these spheres.

Resource changes and trends: The proposed resources for Subprogramme C.2 amount to €1 335 500 in 2006, reflecting an increase in the budget of €34 300, or 2.6%, compared with 2005, with no change in 2007 compared with 2006. The increase reflects the anticipated increase in the number of requests from Member States for direct assistance through country profile studies for sustainable energy development.

Financial resources (2005 prices)

C.2	2005	2006	2007
Reg. budg.	1 301 200	1 335 500	1 335 500

Projects

Project C.2.01: Techno-economic analysis

Main outputs: Selected cost studies (feasibility studies, cost comparisons, cost effectiveness and cost–benefit assessments); economic analyses of risks, regulatory responses and regionalization of the fuel cycle; assessments of economic factors affecting nuclear technology innovation; and comparative assessments of different energy systems or their attributes.

Duration: 2006–2007

Ranking: 1

Recurrent Project C.2.02: Topical issues related to sustainable energy development

Main outputs: Reports and presentations on topical issues related to sustainable development and climate change, and especially on the potential contribution of nuclear technologies; case studies and country profiles analysing sustainable energy development strategies.

Ranking: 2

Subprogramme C.3. Nuclear Knowledge Management

Rationale: An important goal of the Medium Term Strategy is to enhance the contribution of nuclear science and technologies towards meeting, in a sustainable manner, the needs and interests of Member States for economic development and

prosperity. Knowledge is the key to development and capacity building. At present the nuclear industry, and many academic, research and government institutions dealing with nuclear science and technology, are experiencing the early stages of workforce attrition. Without an adequate replenishment of the competent nuclear professionals, the result is an ageing workforce and the loss of the knowledge and skills of those leaving, compounded by the difficulty of finding qualified replacements. With current attrition trends, maintaining present levels of nuclear knowledge will become a formidable challenge in the not too distant future. Aggravating this prospect are the closure and decommissioning of nuclear facilities, which require the collection and preservation of increasing amounts of technical and scientific data, information and knowledge.

At the same time, scenarios of continuing expansion of energy demand worldwide project growing requirements for nuclear energy. Support for keeping the nuclear option open will also require not only assured continuity but also further development of nuclear knowledge.

Effective management of nuclear knowledge thus involves ensuring the continued and enhanced availability of essential reservoirs of both scientific and technical information and qualified personnel. Responding to General Conference resolutions, and in line with its mandate to provide guidance on best practices, the Agency will be working first to explore ways to enhance the synergies among its own in-house nuclear information resources and services, especially INIS and the IAEA Library, and second to develop the necessary tools, methodologies and guidance to assist Member States in the effective management of nuclear knowledge.

Objectives:

— To meet the needs of Member States in the management of knowledge in the fields of nuclear science and technology through the development of methodologies and provision of guidance.

— To enhance the synergy and further develop the Agency's nuclear information resources and services.

Outcome
— Member States apply nuclear knowledge management methodology for nuclear knowledge preservation, capacity building and innovation in the area of nuclear science and technology.

Performance Indicators
— Number of Member States participating in and/or supporting knowledge management activities. — Number of nuclear knowledge management programmes (activities) initiated in Member States and supported by the Agency.

Programmatic changes and trends: In 2006 the Agency will have in place a comprehensive strategy for nuclear knowledge management and will continue to implement projects and activities to maintain and enhance nuclear knowledge in the Secretariat and to support Member States in their knowledge management initiatives. The priority areas will be the development of nuclear knowledge management methodologies applicable both inside the Agency and in Member States, and the integration of the Agency's nuclear information resources.

Resource changes and trends: The proposed resources for Subprogramme C.3 amount to €1 464 200 in 2006, reflecting an increase in the budget of €91 300, or 6.7%, over 2005, with a further increase of €155 000, or 10.6%, in 2007 over 2006. The increase reflects the strengthening of resources for nuclear knowledge management and will be used to: develop methodology and guidance for knowledge management and preservation in specific areas of nuclear science and technology; facilitate sustainable education and training in nuclear science and related fields; and convene a symposium on knowledge management in nuclear facilities in 2007.

Financial resources (2005 prices)

C.3	2005	2006	2007
Reg. budg.	1 372 900	1 464 200	1 619 200

Projects

Project C.3.01: Developing policy, methodology and guidance for nuclear knowledge management

Main outputs: A comprehensive methodology for establishing and implementing nuclear knowledge management programmes in Member States will be developed. Guidance documents and services to assist policy makers in Member States in implementing nuclear knowledge management will be made available. A symposium on knowledge management in nuclear facilities will be organized in 2007.

Duration: 2006–2007

Ranking: 1

Recurrent Project C.3.02: Facilitating sustainable education and training in nuclear science and related fields

Main outputs: Educational networks involving Member States will be further developed. Meetings with Member States will be conducted and platforms and mechanisms for networking will be enhanced. A World Nuclear University (WNU) educational programme and course will be developed and implemented.

Ranking: 1

Recurrent Project C.3.03: Maintenance and preservation of knowledge in specific areas of nuclear science and technology

Main outputs: Enhanced INIS/IAEA Library nuclear management portal; a state of the art report on the Fast Reactor Preservation Network; and a progress report on the CRP on knowledge preservation technologies.

Ranking: 1

Subprogramme C.4. International Nuclear Information System (INIS)

Rationale: Knowledge and information are one of society's fundamental resources and assets. The need to have access to knowledge and information is going to increase, irrespective of the future of nuclear energy and nuclear technology in different Member States. Nuclear information will be needed in Member States where nuclear energy is an integral part of their national sustainable development strategies, but also in those where it is being phased out. Hence, there is a continued need to enhance the Agency's nuclear knowledge and information resources and assets.

INIS has operated on cooperative principles since 1969 as a service to its members. It consists of a bibliographic database and a collection of full text non-conventional literature (NCL), and is by far the largest Agency information resource in nuclear science and technology. In order to ensure a delivery system of continued relevance, INIS must continually evolve and adjust to changes in: political and technological information requirements; the needs of its user base; and information management technologies. INIS will have to become more fully interactive as a key element in the Agency's overall knowledge management programme, developing and expanding partnerships and information exchanges, improving the efficiency of information sharing and full text information and knowledge resources.

Objective: To meet the nuclear information needs of Member States and the Agency through effective management of INIS.

Outcome
— Enhanced access of INIS users in Member States and the Agency to comprehensive and timely scientific and technical information using state of the art technologies.
Performance Indicators
— Level of access and utilization of INIS products and services. — Comprehensiveness and timeliness of coverage of the published literature within the scope of INIS.

Programmatic changes and trends: The primary focus will remain on providing direct on-line access to the full text of all documents referenced in the bibliographic database. This will be done by linking directly to NCL copies held at the Agency, and providing hyperlinks, where available, to other materials.

INIS will reinforce its efforts to achieve comprehensiveness by initiating or maintaining a range of initiatives, including the acquisition of bibliographic data directly from publishers; the identification and full coverage, in partnership with the IAEA Library, of all core journals that fall within its subject scope; enhancements to the coverage of conference literature; and reinforcement of NCL collecting activities to reflect changes in publishing pattern, including coverage of emerging 'open access' journals. Synergy with the IAEA Library will be further enhanced through a series of joint activities.

Capacity building and outreach activities will be maintained in order to enhance the capacity of INIS members to contribute to INIS and use and distribute its products and services.

Resource changes and trends: The proposed resources for Subprogramme C.4 amount to €3 137 400 in 2006, reflecting a decrease in the budget of €97 700, or 3%, compared with 2005, and a further decrease of €70 000, or 2.2%, in 2007 compared with 2006. The decrease reflects a shift of resources to strengthen nuclear knowledge management, as outlined under resource changes and trends for Subprogramme C.3.

Financial resources (2005 prices)

C.4	2005	2006	2007
Reg. budg.	3 235 100	3 137 400	3 067 400

Projects

Recurrent Project C.4.01: INIS production and quality assurance

Main outputs: INIS Atomindex incorporating hyperlinks to full text; INIS bibliographic standards and authorities; documentation; tools; and INIS preservation archives.

Ranking: 1

Recurrent Project C.4.02: INIS services, outreach, capacity building and partnerships

Main outputs: INIS Database on the Internet (with on-line full text access); INIS Database on CD-ROM; INIS NCL on CD-ROM; OECD/NEA Computer Program Services to non-OECD INIS Member States; training seminars and distance learning system; promotional materials and outreach projects; INIS Internet site.

Ranking: 1

Recurrent Project C.4.03: INIS policy, planning, development and innovation

Main outputs: Suggestions and recommendations for the development of INIS; agreement with INIS partners; software and IT systems; new or revised standards and tools.

Ranking: 2

Subprogramme C.5. Library and Information Support

Rationale: The IAEA Library's traditional role has been to provide information support both to the Secretariat staff for the implementation of the Agency's programmes and also to the staff of Permanent Missions in Vienna. There is a need to expand services such as customized research and information services work. Library services need to remain relevant and to reflect both the evolution in information requirements and the evolution of information management technologies.

The Library is a key repository of nuclear knowledge, hence the cross-cutting activities in support of knowledge preservation must make the best possible use of library services. The Library should be included more actively and in a more structured fashion in the synergistic arrangements to be made for information exchange/sharing with other in-house nuclear information resources (nuclear knowledge management and INIS). With more emphasis on the delivery of nuclear knowledge to Member States, novel ways of making the Agency's vast historical and current resources in nuclear knowledge available to the larger nuclear community must be considered, including creating partnerships with nuclear libraries and information resource systems. Moreover, joint in-house activities should ultimately evolve so that the knowledge and information delivery systems being developed can tap into the repositories of knowledge that lie within the Agency, the Library being a main focal point for such coordination.

Objective: To ensure the maintenance, development, enhancement and integration of nuclear information resources, and high quality library and information services.

Outcomes
— Availability of information resources and services required in support of the delivery of Agency programmes.
— Use of information resources and services by authorized users.
Performance Indicators
— Level of satisfaction of library users.
— Level of utilization of library and information resources and services.

Programmatic changes and trends: There will be continuing efforts to ensure an optimal mix of information resources in print and electronic formats taking into account publishers' changing price policies and the availability of information materials free of charge on the Internet. The situation of limited resources versus increasing needs will continue. Cooperation between libraries and between libraries and publishers, database producers, agents and other intermediaries will be increased in order to ensure a sustainable supply of information.

A number of publishers offer consortia access to the whole range of their journals. Consortia purchasing offers for the single library the opportunity either to get access to more journals, thus reducing costs of interlibrary lending operations and document delivery services, or to reduce the cost of acquisitions. Given that no additional funding is available, libraries should establish partnerships and strategic alliances in order to take advantage of the new opportunities offered by scientific publishing and consortia licensing. Web standards and broad access to the Internet are creating a new, collaborative technological landscape. The Library will expand its partnership with nuclear libraries in Member States focused on nuclear knowledge preservation and maintenance. This could result in establishing the Consortia of Nuclear Libraries. Activities of this Consortia of Nuclear Libraries could include acquisition/licensing of nuclear information resources required in support of the implementation of national nuclear programmes, interlibrary lending of publications and document delivery services and others.

In addition to providing regular information services to Library users, emphasis will be given to providing information support for knowledge management as a cross-cutting Agency activity. Synergy between the Library and INIS will be further strengthened through a series of joint activities with the purpose of providing services in support of nuclear knowledge maintenance and preservation activities such as building up collections of information resources for nuclear knowledge preservation and maintenance purposes, including digitization of selected

information materials; developing new information services which ensure seamless access to the worldwide nuclear information resources; providing a virtual nuclear reference service to researchers through an international digital network of INIS National Centres and nuclear libraries.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

C.5	2005	2006	2007
Reg. budg.	2 486 000	2 486 000	2 486 000

Projects

Recurrent Project C.5.01: Development and maintenance of the library's information resources

Main outputs: An updated collection of internal and external information resources relevant to the information needs of the Agency and readily available to users will be maintained.

Ranking: 1

Recurrent Project C.5.02: Provision of library services and information support

Main Outputs: Direct user access to internal and external electronic information resources will be provided through the Library's web site "LISNet". Reference, loan, document delivery and interlibrary loan services providing user access to information sources will also be available.

Ranking: 1

Programme D. NUCLEAR SCIENCE

Rationale: The harnessing of nuclear energy for sustainable development through electrical power production and applications of radioisotopes and ionizing radiation in diverse fields rely on a clear understanding of the principles of nuclear science. A number of Member States have significant nuclear power programmes, while almost all Member States avail themselves of the benefits of non-power applications of nuclear sciences, which continue to grow and contribute towards improving the quality of life. The Agency's responsibility to promote R&D and practical applications of atomic energy for peaceful purposes is dependent on appropriate support to nuclear science aspects. The growth of nuclear science applications is sustained by continuous R&D input from research institutes in Member States, particularly the nuclear research centres. Continuous involvement of the Agency in coordination of this worldwide effort was recommended in a meeting on 'Nuclear Research Centres in the 21st Century'.

Research reactors and particle accelerators are essential facilities for nuclear science and technology. They are the main source of radioisotopes, and are extensively used for materials development and characterization. There are important concerns regarding fuel cycle issues and decommissioning plans of research reactors that require technology support and coordination by the Agency. Nuclear science aspects are also important for a better understanding of the behaviour of reactor materials and ageing studies, and for supporting decommissioning technology and safety of operation and utilization. The last decade has seen a rapid growth in accelerator technology, including the production of reliable accelerators for protons, heavy ions and electrons, and for their routine application in industry, medicine and research. High energy proton accelerators are used as sources of spallation neutrons for advanced materials research and have the potential for the transmutation of actinides. The utilization of new radiation sources, pulsed neutrons and synchrotron light sources, will include networking between different partner laboratories to address the research needs of those studying structural materials, bio-sciences and the environment.

An important factor in the progress of nuclear science has been the development of beam line facilities and instrumentation for various nuclear techniques and for radiation measurements. Continuous support to build capabilities in Member States for the maintenance of nuclear instruments has facilitated progress in many areas, as properly functioning instrumentation is vital for the effective utilization of research reactors and accelerators. Continuing this support further for the quality assurance (QA) of instrumentation for nuclear techniques through distance learning modules and other aids is thus essential.

Nuclear fusion has the potential to become an abundant source of energy. About 50 Member States (including 30 developing countries) have programmes in plasma physics and fusion research. Since experimental facilities for nuclear fusion research are expensive to build and operate, international, cooperation facilitated and coordinated by the Agency, is particularly important. The Agency can play a proactive role to catalyse innovation and enhance worldwide commitment to fusion, and can create an awareness of the different concepts of magnetic as well as inertial confinement.

The entire spectrum of such nuclear science applications is deeply rooted in atomic and nuclear data. As a consequence of worldwide cooperative efforts (by the Agency along with other major international database operators), the generation of quality nuclear data, evaluation and dissemination have become integrated activities worldwide. The Agency's databases are the main sources of up to date information in this area for Member States. Work related to data in support of fuel cycles (the thorium–uranium cycle), transmutation studies, fusion reactor design, nuclear medicine (especially for new therapeutic radionuclides, decay data and reaction cross-section data), and nuclear based analytical techniques is essential.

Many developing Member States seek technical assistance from the Agency in order to enhance their nuclear science based programmes. The continued involvement of the Agency is required to foster new developments. The programme on nuclear science has been formulated to take into account the comments of Member States and of external multinational advisory groups such as the evaluation committees, SAGNE, the International Nuclear Data Committee (INDC), and the International Fusion Research Council (IFRC).

Objective: To increase Member State capabilities in the development and application of nuclear science as a tool for their economic development.

Outcomes
— Increased international cooperation in nuclear sciences.
— Increased competence of national institutions and better use of resources and facilities.

Outcomes (cont'd)
— Greater use of Agency databases on atomic and nuclear data.
Performance Indicators
— Number of Agency products/documents provided to and used by Member States for their nuclear science activities.
— Number of nuclear science institutions benefiting from the Agency's programme.
— Demand for Agency nuclear data and related services.

Specific criteria for prioritization:

— First priority is given to activities aimed at the implementation of:
  - o Recommendations/requests made by the General Conference and/or prerequisites to meet them;
  - o Collaborative work with network organizations and other UN/intergovernmental agencies;
  - o Recommendations of standing advisory committees — SAGNA, SAGNE, INDC and IFRC.

— Second priority is given to project activities to meet the requests of groups of Members States and suggestions for future pursuits arising from major conferences, technical meetings and research coordination meetings.

— Third priority is given to other activities that help achieve or contribute to programme objectives.

Subprogramme D.1. Atomic and Nuclear Data

Rationale: All applications of nuclear technology depend on atomic and nuclear data to provide accurate descriptions of the underlying atomic and nuclear processes employed in both energy generation and non-energy studies. Quantitative understanding of the formation and decay processes guarantees appropriate safety margins, for example, in the operation of nuclear plants and medical applications of radioisotopes. Advice is regularly sought and taken from atomic and nuclear data specialists in Member States, and biennial meetings of the Atomic and Molecular Subcommittee of the IFRC and INDC provide debate and guidance in all projects. Necessary data include reaction cross-sections, specification of the atomic and nuclear properties of the resulting reaction products, and quantification of the radioactive decay characteristics. While these data are reasonably well defined for some applications (such as traditional uranium based nuclear power plants), much remains to be done in other areas. For the 2006–2007 biennium, work in support of other fuel cycles (Th–U cycle), transmutation studies, fusion reactor design, nuclear medicine (especially for new therapeutic radionuclides; decay data, reaction cross-section data), and nuclear based analytical techniques will be pursued.

The Agency contributes significantly by taking a lead role in coordinating various international data networks and undertaking in-house studies that assist in the establishment and maintenance of a wide range of data libraries dedicated to experimental, theoretical and evaluated atomic, molecular and nuclear data. Convenient and cost free access to these shared international databases of compiled and evaluated data is provided by the Agency Nuclear Data Centre. Under such circumstances, the Agency also considers and exploits ongoing advances of information technology to improve data communications and services to all Member States.

Beneficiaries within Member States consist of fission and fusion reactor designers and operators, reprocessing facility operators, designers of fuel transport and radwaste storage facilities, and physicists and analysts involved in various non-energy applications (e.g. nuclear medicine, materials analysis and environmental monitoring).

Objectives: To increase the capabilities and expertise of Member States to ensure the safe and economic adoption of all forms of nuclear technologies by providing rapid and cost free access to reliable atomic and nuclear data for energy and non-energy applications.

Outcomes
— Adoption by Member States and usage of atomic and nuclear data from CRPs, leading to their establishment as internationally accepted databases.
— Adoption by Member States of databases that originate from external sources.
— Usage by Member States of all forms of updated atomic, molecular and nuclear data through Agency services.
Performance Indicators
— Extent of usage of recommended sets of atomic and nuclear data from CRPs.
— Extent of usage of databases that originate from external sources.
— Demand for Agency nuclear data and related services.

Programmatic changes and trends: Project contents change on the basis of new requirements and demands over a three to four year cycle. In Project D.1.01, storage and retrieval systems for nuclear data will be changed to speed up these functions. Work on cross-section standards was completed in 2005 and the emphasis has changed to maintenance (Project D.1.02). Project D.1.03 is in the process of being redirected towards the creation of data files for medical therapy, while the emphasis of Project D.1.06 is more deliberately aimed at nuclear analytical techniques and their data needs. Project D.1.07 sees some expansion at the expense of other areas, with an increasing demand for consideration of actinide data.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

D.1	2005	2006	2007
Reg. budg.	2 354 200	2 354 200	2 354 200

Projects

Recurrent Project D.1.01: Data services, data networks and user support

Main outputs: Individual databases will be regularly established, preferably on a relational database platform, with the emphasis on quality and reliability. These outputs will be linked to both ongoing and completed CRPs and external inputs from other data centres and individuals.

Ranking: 1

Project D.1.02: Nuclear data standards and evaluation methods

Main outputs: New standard databases and scientific publications on cross-sections for nuclear standards.

Duration: 2004–2008

Ranking: 1

Project D.1.03: Nuclear data for radiotherapy using radioisotopes and external radiation sources

Main outputs: New nuclear products and scientific publications on cross-sections for therapeutic radioisotopes.

Duration: 2003–2010

Ranking: 1

Project D.1.04: Atomic and molecular data for fusion experiments

Main outputs: New atomic and molecular data products and scientific publications on cross–section data for fusion studies.

Duration: 2006–2011

Ranking: 1

Project D.1.05: Data for Th-U fuel cycle

Main outputs: New nuclear products and scientific publications on cross–sections for Th–U fuel cycle.

Duration: 2002–2007

Ranking: 1

Project D.1.06: Nuclear data for reactor dosimetry and analysis

Main outputs: New nuclear products and scientific publications on cross-sections and decay data for dosimetry.

Duration: 2005–2010

Ranking: 1

Project D.1.07: Nuclear data for advanced nuclear facilities

Main outputs: New nuclear products and scientific publications on cross-sections and decay data for advanced nuclear facilities.

Duration: 2005–2011

Ranking: 1

Subprogramme D.2. Research Reactors

Rationale: For nuclear research and technology development to continue to prosper, research reactors must be safely and reliably operated, adequately utilized, refurbished when necessary, provided with adequate non-proliferating fuel cycle services and safely decommissioned at the end of life. Moreover, since about 60% of the operating research reactors in the world are over 30 years old, ageing core materials and the technology of ageing management are priority issues in the majority of Member States with research reactors.

The Agency has established its competence in the area of research reactors with a long history of assistance to Member States in improving their utilization, by taking the lead in the development of norms and codes of good practice for all aspects of the nuclear fuel cycle and in the planning and implementation of decommissioning. This subprogramme is formulated to cover this broad range of issues and to promote the continued development of scientific research and technological development using research reactors. Member States look towards the Agency for coordination of the worldwide effort in this area and for help in solving specific problems.

To reflect the maturity of activities around research reactors, their average age and especially the recommendations of the recent Agency conference on research reactor utilization, safety, decommissioning, fuel and waste management, the

focus of the subprogramme is gradually changing. From the traditional support of fundamental research and training the focus has moved to helping facilities with strategic planning to increase use in more commercial areas such as isotope production and materials modification, in refurbishment and replacement of ageing equipment, in the management of increasing spent fuel inventories and in planning decommissioning. Regional and interregional thematic collaborations for enhanced utilization of research reactors will be initiated and supported.

To contribute to non-proliferation efforts worldwide, support for Reduced Enrichment of Research and Test Reactors (RERTR) and the programmes of repatriation of research reactor fuel to the country of origin is being strengthened. To address Member State concerns about final disposition of research reactor spent nuclear fuel; the subprogramme is promoting regional and international solutions to the back end of the research reactor fuel cycle and international collaboration to assess projected long term time needs on a global and regional basis.

Objectives:

— To increase the capabilities of interested Member States to safely and reliably carry out scientific research and technology development at research reactors, conduct ageing management, decommissioning, refurbishment and modernization.

— To enhance the potential of interested Member States to plan new facilities when needed, to cope with research reactor fuel cycle issues and reduce proliferation risks by core and target conversion and to repatriate fuel to the country of origin.

Outcomes
— Increased use of the Agency's guidance by Member States to address issues in research reactor utilization, fuel cycle (including the use of advanced high density fuels), non-proliferation (especially reduction of the number of reactors employing HEU), implementation of strategic plans and construction of purpose designed facilities for new applications.
— Increased use by Member States of Agency provided information to manage ageing and refurbishment of research reactor facilities and to plan and implement decommissioning.
Performance Indicators
— Number of facilities planning utilization strategies and implementing new applications. — Number of facilities with improved spent fuel storage conditions.
Performance Indicators (cont'd)
— Number of reactors converting from HEU to LEU fuel and/or using advanced high density fuels. — Successful repatriation of fresh and spent fuel to the country of origin.
— Number of facilities carrying out ageing management programmes, refurbishment or formulating and implementing decommissioning plans.

Programmatic changes and trends: For 2006–2007, the subprogramme keeps the focus on the different facets of research reactors, such as effective utilization, improvement of the capabilities of Member States for planning new and innovative reactors, the back end of the fuel cycle and the technological and engineering aspects of ageing management and decommissioning. Nevertheless, following the recommendations of the recent Agency sponsored conference on research reactor utilization, safety, decommissioning, fuel and waste management, and to address increasingly important non-proliferation concerns, progressively more emphasis will be put on support of RERTR and its non-proliferation goals, core conversion from HEU to LEU, target conversion from HEU to LEU, the repatriation of research reactor fuels to the country of origin and the global clean out of research reactor fissile material, including experimental or exotic fuels and sources.

To address Member State concerns about final disposition of research reactor spent nuclear fuel, regional and international solutions to the back end of the research reactor fuel cycle and international collaboration to assess projected needs, with a long term time horizon of 2025 or 2030, for research reactors on a global and regional basis will be promoted.

Resource changes and trends: The proposed resources for Subprogramme D.2 amount to €942 000 in 2006, reflecting an increase in the budget of €63 100, or 7.2%, compared with 2005, with a decrease of €30 000, or 3.2% in 2007, compared with 2006. The increase results from the inclusion of a new position of Nuclear Engineer to implement activities in the areas of research reactor conversion from HEU to LEU and the back end for research reactor fuel cycles. The increase is partly offset by the fact that the new trends in neutron research previously covered under D.2.01 are now included in Subprogramme D.3, leading to a decrease in resources in 2006 and 2007 for utilization of research reactors.

Financial resources (2005 prices)

D.2	2005	2006	2007
Reg. budg.	878 900	942 000	912 000

Projects

Recurrent Project D.2.01: Effective utilization of research reactors

Main outputs: Training will be provided for the preparation of strategic plans, deployment of additional research reactor applications and marketing of research reactor services. A report on the development and application of the technique of residual stress measurements in materials will be produced. A technical document on development of improved sources and imaging systems for neutron radiography will be produced. Reports on the assessment methodology for strategic networking and sustainability planning are part of the work on the utilization of research reactors. The conference proceedings on research reactor utilization, safety, decommissioning, fuel and waste management will be published. The project will also provide an updated reactor database giving the status of research reactors worldwide.

Ranking: 1

Recurrent Project D.2.02: Supporting research reactor modernization and innovation

Main outputs: Publication of proceedings/working material, resulting from periodically organized workshops, and assistance to Member States provided on request.

Ranking: 2

Recurrent Project D.2.03: Addressing research reactor fuel cycle issues

Main outputs: Reports on: summary statistics of research reactor spent fuel inventories and their problems; shipments of research reactor fuel to its country of origin; and interim CRP results. Technical documents on good practices for the management and storage of research reactor spent fuel and an updated guidebook on conversion of research reactors from HEU to LEU will be produced.

Ranking: 1

Project D.2.04: Facilitating transfer of know-how on decommissioning of research reactors and irradiated core materials

Main outputs: A technical report on decommissioning of research reactors under conditions of limited resources will be issued.

Duration: 2006–2012

Ranking: 1

Subprogramme D.3. Utilization of Accelerators and Instrumentation

Rationale: Accelerators continue to have a major impact in the fields of materials science and medicine. Applied research in accelerator applications offers a broad spectrum of activities that builds a cadre of trained experts in Member States, and generates knowledge for innovative methodologies and tools.

Many Member States have acquired accelerators and nuclear instrumentation to meet their developmental needs and to build an infrastructure for sustainable exploitation of nuclear energy. Support for the development of low energy spallation sources and new concepts of neutron moderation, such as cold moderators, can help to enhance neutron based research in developed as well as in developing countries. The demand for particle accelerators has also increased. The Agency's support is needed for the proper and effective utilization of nuclear instrumentation by laboratories in Member States so as to: achieve reliable operation; develop new applications; and implement quality assurance. The utilization of new radiation sources (e.g. synchrotron light sources) will include networking between different partner laboratories and address research needs of biosciences and environmental studies. Emphasis on increasing internal synergies is envisaged so as to derive the benefits of the above techniques for addressing issues of concern in nuclear fuel cycle, for example, study of structural materials.

Objectives:

— To achieve increased performance of accelerators using ion beam applications, electromagnetic radiation and neutrons.

— Improved instrumentation for nuclear techniques through training and education, and QA/QC so as to facilitate more effective utilization of research reactors, accelerators and other facilities.

Outcomes
— Use of accelerators and instrumentation in ion beam applications and applications of electromagnetic radiation and neutrons for material modification/characterization.
— Increased competence in Member States in the utilization of nuclear instrumentation and techniques.
— Increased awareness of QA/QC aspects of nuclear techniques and instrumentation.

Performance Indicators
— Number of institutions benefiting from accelerator related programmes as reported by Member States during conferences, technical meetings, workshops and consultancies.
— Number of publications, software and training kits used in Member States. — Publications resulting from utilization of accelerators and instrumentation.
— Number of research facilities taking part in quality certification procedures.

Programmatic changes and trends: The ongoing projects on effective utilization of particle accelerators, nuclear instrumentation maintenance and improvements in nuclear spectrometry applications had been planned until the end of 2005. The demand for nuclear instrument maintenance by the Member States is, however, still high, especially concerning quality management aspects. This has led to the extension of the corresponding project (D.3.02) for another four years (until 2009). The main focus will, however, shift from repair of instruments and support through replacement of nuclear instrumentation, to guidance of laboratories in order to improve their QA/QC system for instrumentation and to use their instrumentation more effectively in fields such as radiation protection, medicine, industrial applications, environmental monitoring, and surveillance of trafficking of drugs and nuclear material.

The effective use of accelerators and ion beam applications in diverse fields, such as nano-technology, needs to be enhanced and catalysed. New spallation neutron source facilities will start operation in 2006–2007. They will influence the layout of neutron instrumentation, including new detectors and new neutron scattering set-ups. The development of low energy spallation sources and new concepts of neutron moderation can help to enhance neutron based research in developed as well as in developing countries. The utilization of the new sources (e.g. synchrotron light sources) will include networking involving different partners. A new project to support research using neutron beam and spallation neutron source facilities, accelerators and synchrotron sources would be started.

Resource changes and trends: The proposed resources for Subprogramme D.3 amount to €2 421 400 in 2006, reflecting an increase in the budget of €34 700, or 1.5%, compared with 2005, with a further increase of €30 000, or 1.2%, in 2007 over 2006. This increase mainly contributes to new activities on small and medium scale accelerator driven neutron sources in both years.

Financial resources (2005 prices)

D.3	2005	2006	2007
Reg. budg.	2 386 700	2 421 400	2 451 400

Projects

Recurrent Project D.3.01: Effective utilization of particle accelerators

Main outputs: The project will produce technical reports and publications on various topics related to the application of accelerators: (a) ion beam induced changes to the surface morphology of materials; and (b) the assessment of the Agency's role in new and emerging areas of accelerators and their applications and on teaching nuclear science with accelerators. A technical document on ion beam modification of insulators and one on the development of new techniques and applications of accelerator mass spectrometry will be produced. Young scientists and engineers trained in pulsed neutron sources and accelerator based nuclear techniques and analysis.

Ranking: 1

Project D.3.02: Nuclear instrumentation maintenance

Main outputs: Reduced downtime of instruments; reports on quality assurance schemes and repair of instruments and on innovative methods for maintenance and repair of nuclear instruments; and CD-ROMs on distance learning tools. The technical report of the meeting on validation procedures of software applied in nuclear instruments and on QA and QC will be documented. Working material and reports on QA and QC will be produced.

Duration: 2002–2009

Ranking: 2

Recurrent Project D.3.03: Improvements in nuclear spectrometry applications

Main outputs: Technical documents on the use of spectrometry and XRF and on unification of nuclear spectrometries. A computer based module for learning and teaching spectrometry will be provided. The XRF newsletter will be routinely distributed.

Ranking: 2

Subprogramme D.4. Nuclear Fusion Research

Rationale: It is generally accepted that global energy demand will rise to levels that traditional energy sources (coal, gas, oil) can no longer support without unacceptable levels of CO_2 release into the atmosphere. Fusion is one of the most promising ways to meet the rising energy and power demands of future generations, being inherently safe and based on a lasting worldwide available fuel resource.

Achievements in the field of fusion and materials research will be noticeable, with the construction of ITER being the most visible achievement. ITER will help gain the scientific and engineering knowledge before the first fusion power plant, called "demo", is built. A learning period of about 20 years is the most immediate commitment in the road map for fusion energy.

Continuing support to plasma physics research, addressing issues of alternative confinement systems and the study of dense plasmas need to be supplemented by support to the engineering aspects of fusion energy. The Agency can play a pro-active role to catalyse innovation and enhance worldwide commitment to fusion and by creating awareness of the different concepts of magnetic as well as inertial confinement. An international advisory committee, the IFRC, comprising leading experts from both developed and developing Member States, gives guidance to the plasma physics and nuclear fusion activities of the Agency.

Objectives:

— To strengthen cooperation amongst major institutions and worldwide commitment for plasma physics and nuclear fusion in order to create a viable source of nuclear energy through support to new and alternative fusion confinement concepts.

Outcome
— New R&D progress and collaboration among Member States in the field of nuclear fusion.
Performance Indicator
— Number of cost free participants in Agency sponsored meetings on fusion.

Programmatic changes and trends: The ongoing work on ITER will interest more Member States in plasma and fusion technology. New knowledge on controlled nuclear fusion will be built up. The Agency will facilitate the ITER research project negotiations. Materials and engineering challenges will influence the work of the fusion community, thus influencing conferences, workshops and technical meetings of the Agency.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

D.4	2005	2006	2007
Reg. budg.	519 400	519 400	519 400

Projects

Recurrent Project D.4.01: Supporting plasma physics and fusion research

Main outputs: Proceedings of the 21st Fusion Energy Conference being published as a CD-ROM; reports on fusion materials research, inertial and magnetic confinement; reports and scientific publications on the application of dense plasmas, the interface study of the driver-target-chamber system, and joint research using small tokamaks.

Ranking: 1

Recurrent Project D.4.02: International Thermonuclear Experimental Reactor

Main outputs: Reports by ITER parties and agreements signed by parties, as well as ITER Newsletter and ITER related reports and documents, will be produced.

Ranking: 1

Subprogramme D.5. Support to ICTP

Rationale: The overall mission of the Abdus Salam International Centre for Theoretical Physics (ICTP) at Trieste, Italy, was defined in the 1969 IAEA–UNESCO Agreement, approved by the Board of Governors, concerning the Centre's joint operation, which was to foster, through training and research, the progress of all branches of theoretical physics, with emphasis on responding to the needs of science in developing countries. The programme of ICTP has since expanded to include permanent activities in high energy and astroparticle physics, condensed matter and statistical physics, pure and applied mathematics, earth sciences, applied physics and ecological and environmental economics. Recent years have seen enhanced scientific collaboration between ICTP and the Agency, with an increase in joint activities at the Centre in the areas of its expertise. ICTP and the Agency also support scientists from developing countries to access advanced nuclear, accelerator and isotope laboratories. The role of ICTP needs to be fully strengthened in order to effectively implement the identified common programmes with the Agency in information exchange, research and scientific studies, and training.

Objective: To enhance the scientific capability of developing countries through training and exchange of knowledge between scientists from developing and developed countries in the nuclear field, as well as fields related to the applications of nuclear science and technology.

Outcome
— Scientists from developing and developed Member States making use of knowledge obtained through their participation in the scientific programmes of ICTP.
Performance Indicators
— Number of scientists benefiting from ICTP programmes in fields related to the Agency programmes and using the information in their home institutions. — Number of new scientific centres of excellence established in developing countries.

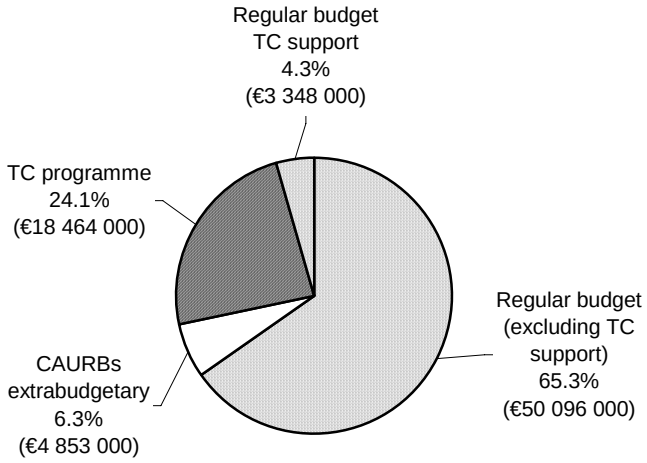
Programmatic changes and trends: IAEA–ICTP joint activities and co-sponsored activities will increase, with emphasis on the fields of nuclear data, plasma physics, atomic and radiation physics, medical physics, models for isotope hydrology, use of isotopes to validate climate change models, nuclear knowledge management, and seismic risk analysis for nuclear power plants.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

D.5	2005	2006	2007
Reg. budg.	2 196 000	2 196 000	2 196 000

Total Resources for Nuclear Power, Fuel Cycle and Nuclear Science in 2006–2007 (including the TC programme)



	2006	2007	Total for biennium
Regular budget (excluding TC support)	25 005 000	25 091 000	50 096 000
Regular budget TC support	1 674 000	1 674 000	3 348 000
Subtotal regular budget:	26 679 000	26 765 000	53 444 000
CAURBs extrabudgetary	2 520 000	2 333 000	4 853 000
Funds from UN organizations	-	-	-
TC programme	9 212 000	9 252 000	18 464 000
TOTAL	38 411 000	38 350 000	76 761 000

The total resources for implementing Major Programme 1, which are illustrated (at 2006 prices) in the table and chart above, amount to €76 761 000 for the biennium. Regular budget resources constitute €53 444 000, or 69.6%, of this amount. The regular budget for 2006 (at 2005 prices) shows an increase of €102 000 compared with the adjusted budget for 2005 and a further increase of €85 000 in 2007 compared with 2006. These increases are in line with the 'Package Proposal'.

An amount of €3 348 000 of regular budget funding, or 4.3% of total resources, will be used to support technical cooperation programming worth €18 464 000 either through scientific and technical support during the formulation and implementation of projects, or as an actual contribution to the programme itself through the provision of expert services.

Extrabudgetary funding expected for the biennium accounts for a further €4 853 000, or 6.3%, of total resources, all of which relates to the funding of CAURBs. There is a further €1 223 000 for CAURBs (listed in Table 10) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 8 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Regular Budget Resources for the Biennium

Table 9

	Project / Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
1.	Overall management, coordination and common activities	678 600	-	-	678 600	-	-	678 600	1.1	686 000	685 900
	Total	678 600	-	-	678 600	-	-	678 600	1.1	686 000	685 900
A.1	Nuclear Power Plant Operating Performance and Life Cycle Management	1 479 300	(44 700)	(3.0)	1 434 600	23 000	1.6	1 457 600	1.5	1 456 100	1 479 500
A.2	Improving Organizational Performance	1 225 700	44 800	3.7	1 270 500	(23 000)	(1.8)	1 247 500	1.2	1 285 600	1 261 900
A.3	Coordination of the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO)	196 900	109 800	55.8	306 700	-	-	306 700	0.7	308 900	308 900
A.4	Technology Development for Advanced Reactor Lines	1 621 500	(147 700)	(9.1)	1 473 800	29 000	2.0	1 502 800	1.6	1 496 800	1 527 400
A.5	Support for Non-Electric Applications of Nuclear Power	441 200	90 800	20.6	532 000	(29 000)	(5.5)	503 000	1.6	540 400	510 300
Programme A - Nuclear Power		4 964 600	53 000	1.1	5 017 600	-	-	5 017 600	1.4	5 087 800	5 088 000
B.1	Information and Analysis of the Nuclear Fuel Cycle and Materials Management	777 300	(37 700)	(4.9)	739 600	(900)	(0.1)	738 700	1.1	747 900	747 300
B.2	Nuclear Power Reactor Fuel Engineering	526 700	11 700	2.2	538 400	5 600	1.0	544 000	1.2	544 800	550 100
B.3	Management of Spent Fuel from Nuclear Power Reactors	534 900	(14 100)	(2.6)	520 800	(4 200)	(0.8)	516 600	1.3	527 400	523 200
B.4	Topical Nuclear Fuel Cycle Issues	593 400	(8 700)	(1.5)	584 700	(500)	(0.1)	584 200	1.2	592 000	591 500
Programme B - Nuclear Fuel Cycle and Materials Technologies		2 432 300	(48 800)	(2.0)	2 383 500	-	-	2 383 500	1.2	2 412 100	2 412 100
C.1	Energy Modelling, Databanks and Capacity Building	1 368 100	(27 900)	(2.0)	1 340 200	-	-	1 340 200	1.2	1 356 500	1 356 500
C.2	Energy Economy Environment (3E) Analysis	1 301 200	34 300	2.6	1 335 500	-	-	1 335 500	1.1	1 350 300	1 350 300
C.3	Nuclear Knowledge Management	1 372 900	91 300	6.7	1 464 200	155 000	10.6	1 619 200	1.1	1 479 800	1 639 400
C.4	International Nuclear Information System (INIS)	3 235 100	(97 700)	(3.0)	3 137 400	(70 000)	(2.2)	3 067 400	1.1	3 171 100	3 098 200
C.5	Library and Information Support	2 486 000	-	-	2 486 000	-	-	2 486 000	3.3	2 567 000	2 567 000
Programme C - Capacity Building and Nuclear Knowledge Maintenance for Sustainable Energy Development		9 763 300	-	-	9 763 300	85 000	0.9	9 848 300	1.7	9 924 700	10 011 400
D.1	Atomic and Nuclear Data	2 354 200	-	-	2 354 200	-	-	2 354 200	1.3	2 384 400	2 384 000
D.2	Research Reactors	878 900	63 100	7.2	942 000	(30 000)	(3.2)	912 000	1.5	956 000	924 700
D.3	Utilization of Accelerators and Instrumentation	2 386 700	34 700	1.5	2 421 400	30 000	1.2	2 451 400	1.5	2 458 700	2 490 100
D.4	Nuclear Fusion Research	519 400	-	-	519 400	-	-	519 400	1.9	529 400	528 900
D.5	Support to ICTP	2 196 000	-	-	2 196 000	-	-	2 196 000	2.0	2 239 900	2 239 900
Programme D - Nuclear Science		8 335 200	97 800	1.2	8 433 000	-	-	8 433 000	1.6	8 568 400	8 567 600
Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science		26 174 000	102 000	0.4	26 276 000	85 000	0.3	26 361 000	1.5	26 679 000	26 765 000

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Core Activities Unfunded in the Regular Budget

Table 10

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
A.1.02	Integrated NPP life cycle management			
	A.1.02/11	*Coordinate a CRP on influence of synergism of nickel and other alloying elements on RPV materials irradiation embrittlement (2005-2009) (I2.10.17) and hold a research coordination meeting in 2007*	23 000	41 000
	Subprogramme A.1: Nuclear Power Plant Operating Performance and Life Cycle Management		23 000	41 000
A.2.01	Strengthening and harmonizing quality management systems			
	A.2.01/6	*Organize a workshop on application of effective management systems in nuclear installations and activities in 2007 (in conjunction with J.3)*	7 000	84 000
A.2.02	Strengthening national and regional nuclear power infrastructures			
	A.2.02/7	*Develop guidance on owner's project management activities in supervising a new project*	14 000	7 000
	A.2.02/10	*Develop performance indicators for construction and commissioning activities*	7 000	14 000
	Subprogramme A.2: Improving Organizational Performance		28 000	105 000
A.4.01	Technology advances in water cooled reactors for improvements in economics and safety			
	A.4.01/1	*Prepare a TECDOC on advanced applications of water cooled NPPs, including applications of process heat and use of off-peak electricity for industrial scale generation of hydrogen via electrolysis (in conjunction with A.5, programme C and OECD-NEA)*	10 000	-
	A.4.01/5	*Prepare a TECDOC on guidelines for HWR plant life extension refurbishment processes and technologies (in conjunction with A.1.02; A.1.02 leads)*	17 000	17 000
A.4.02	Technology advances in fast reactors and accelerator driven systems			
	A.4.02/4	*Perform a comparative assessment of the dynamics and safety characteristics of transmutation systems and hold a technical meeting in 2006*	12 000	5 000
	A.4.02/5	*Review fuel failure and failed fuel detection systems for fast reactors and hold a technical meeting in 2006*	12 000	-
	A.4.02/9	*Coordinate a CRP on updated codes and methods to reduce the calculational uncertainties of the LMFR reactivity effects (1999-2005) (I3.20.05)*	5 000	-
A.4.03	Technology advances for gas cooled reactors (GCR)			
	A.4.03/1	*Prepare a TECDOC on emerging designs and deployment challenges of modular HTGR plants and hold a technical meeting in 2007*	-	15 000
A.4.04	Common technologies and issues for small and medium sized reactors (SMR)			
	A.4.04/1	*Review common enabling technologies for SMRs and hold a technical meeting in 2006 (partially unfunded)*	22 000	-
	A.4.04/2	*Review options to break the economy of scale for SMRs and hold a technical meeting in 2007 (partially unfunded)*	-	10 000
	A.4.04/3	*Review passive safety design options for SMRs (in conjunction with J.4.01)*	17 000	-

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Core Activities Unfunded in the Regular Budget
Table 10 (Contd.)

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
A.4.04	*A.4.04/4*	*Review the experience and options relevant for validation, testing and demonstration of passive safety systems for SMRs (in conjunction with J.4.01) and hold a technical meeting in 2006 (partially unfunded)*	10 000	10 000
	A.4.04/9	*Coordinate a CRP on the identification of competitive technological options for SMRs (2006-2009) and hold a research coordination meeting in 2006 and 2007*	40 000	40 000
	Subprogramme A.4: Technology Development for Advanced Reactor Lines		145 000	97 000
A.5.01	Support for demonstration of nuclear seawater desalination			
	A.5.01/9	*Hold a technical meeting on integrated nuclear desalination systems at KANUPP or KAERI in 2006 and 2007*	15 000	15 000
	A.5.01/11	*Consult with Member States on nuclear desalination programmes and hold regular INDAG meeting in 2006 and 2007 (partially unfunded)*	-	8 000
	Subprogramme A.5: Support for Non-Electric Applications of Nuclear Power		15 000	23 000
Programme A - Nuclear Power			211 000	266 000
B.2.01	Supporting the sharing of experience in the development and use of fuel structural materials and water chemistry management in nuclear power plants			
	B.2.01/3	*Coordinate a CRP on delayed hydride cracking of zirconium alloy fuel cladding (DHC) (2005-2009)*	57 000	57 000
	Subprogramme B.2: Nuclear Power Reactor Fuel Engineering		57 000	57 000
B.3.01	Promoting technologies and strategies for spent fuel management			
	B.3.01/3	*Prepare a TECDOC on optimization strategies for spent fuel storage cask loading (2006-2008)*	15 000	10 000
	B.3.01/4	*Prepare a TECDOC on the survey of wet and dry storage (2006-2007) (partially unfunded)*	15 000	-
	Subprogramme B.3: Management of Spent Fuel from Nuclear Power Reactors		30 000	10 000
B.4.01	Support enhancement of nuclear fuel cycle materials processing and management technologies			
	B.4.01/4	*Assess innovative fuels including inert matrix fuels and more advanced fuels for FRs and thermal reactors (2006-2008)*	8 000	16 000
	B.4.01/12	*Coordinate a CRP on material flow analysis for innovative fuel cycles and reactors (2006-2010)*	30 000	55 000
B.4.02	Providing insight for and support in addressing proliferation resistance in the current and future nuclear fuel cycle and materials management			
	B.4.02/8	*Coordinate a CRP on system studies to arrive at essential characteristics for developing integrated fuel cycle and integrated waste management (2006-2010)*	30 000	55 000
	Subprogramme B.4: Topical Nuclear Fuel Cycle Issues		68 000	126 000
Programme B - Nuclear Fuel Cycle and Materials Technologies			155 000	193 000

Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science

Core Activities Unfunded in the Regular Budget
Table 10 (Contd.)

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
D.1.03	Nuclear data for radiotherapy using radioisotopes and external radiation sources			
	D.1.03/2	*Coordinate a CRP on evaluated nuclear data files of charged particle interactions for medical therapy applications (2007-2010), and hold RCM in 2007*	10 000	35 000
D.1.04	Atomic and molecular data for fusion experiments			
	D.1.04/6	*Coordinate a CRP on atomic and molecular data for fusion devices (2007-2011) and hold RCM in 2007*	-	35 000
	Subprogramme D.1: Atomic and Nuclear Data		10 000	70 000
D.2.01	Effective utilization of research reactors			
	D.2.01/5	*Prepare reports on specific application of research reactors*	-	30 000
	D.2.01/10	*Prepare documents on strategic planning for sustainability through regional workshops*	30 000	30 000
D.2.04	Facilitating transfer of know-how on decommissioning of research reactors and irradiated core materials			
	D.2.04/4	*Coordinate a CRP on ageing of irradiated reactor core materials (2006-2010)*	58 000	30 000
	Subprogramme D.2: Research Reactors		88 000	90 000
D.3.01	Effective utilization of particle accelerators			
	D.3.01/2	*Prepare a report on application of accelerators for the knowledge and the preservation of cultural heritage*	20 000	-
D.3.03	Improvements in nuclear spectrometry applications			
	D.3.03/6	*Prepare a report on new developments for the focusing of neutrons and X rays for applications in microscopy*	30 000	-
	D.3.03/9	*Establish methodology for selected applications of SEM*	5 000	5 000
	Subprogramme D.3: Utilization of Accelerators and Instrumentation		55 000	5 000
D.4.01	Supporting plasma physics and fusion research			
	D.4.01/4	*Coordinate a CRP on integrated approach to dense plasma applications in nuclear fusion technology (2006-2009)*	50 000	30 000
	Subprogramme D.4: Nuclear Fusion Research		50 000	30 000
Programme D - Nuclear Science			203 000	195 000
Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science			569 000	654 000

Major Programme 2 – NUCLEAR TECHNIQUES FOR DEVELOPMENT AND ENVIRONMENTAL PROTECTION

Introduction

The major programme on Nuclear Techniques for Development and Environmental Protection continues to cover key areas that formed the basis of the 2004–2005 biennium programmes and which were identified by the World Summit on Sustainable Development (WSSD), Johannesburg, 2002. WSSD re-affirmed the Agenda 21 Action Plan and the priorities identified in the Millennium Declaration. Water, energy, health, agriculture and biodiversity, known as the WEHAB topics, emerged as key areas for action.

Through this major programme nuclear and isotope techniques, on their own or integrated with other technologies, are used to assist in providing unique solutions to helping solve the relevant WEHAB topics. The techniques are utilized in the programmes addressing agricultural productivity and food security, improvement of human health, increased availability of water resources, assessment and management of the marine and terrestrial environments and industrial applications using radioisotopes and radiation technology.

Increasing recognition is given in the major programme to the inter-dependence of the constituent programmes and subprogrammes, and the need to take holistic approaches where relevant. For example, agriculture is a major user of water resources; radiopharmaceuticals development and production relies closely on inputs from medical end-users; management of the marine and terrestrial environmental and aquatic environments are related to pollution control and to impacts on coastal zone issues, and understanding of climate change is linked to better understanding of the water cycle. Opportunities are taken to develop cross-cutting projects and research in these and other areas as appropriate.

The major programme particularly provides opportunities for developing Member States to participate in research and information exchange on the use of nuclear and isotopic techniques. Such participation strengthens the capacities of national scientific and technical institutions and increases the use of internationally recognized procedures and standards for the application of nuclear techniques in national programmes.

Cooperation with United Nations organizations, particularly FAO, IOC (UNESCO), UNEP, WHO and WMO, will continue and be strengthened as opportunities allow, and support to and partnerships with other relevant and mandated bodies such as Pan African Tsetse and Trypanosomosis Eradication Campaign (PATTEC) and the Programme Against African Trypanosomosis (PAAT) will be a hallmark of these efforts. Additionally, collaboration with non-traditional partners will be pursued where this will increase the effectiveness of the major programme.

Scientific and research support will be provided by the Agency's Laboratories at Seibersdorf (the Physics, Chemistry and Instrumentation Laboratory and the Agriculture and Biotechnology Laboratory), the isotope hydrology Laboratory in Vienna and the Marine Environment Laboratory in Monaco.

Objective

To enhance the capacity of Member States to meet basic human needs and to assess and manage the marine and terrestrial environments through the integration of nuclear and isotopic techniques, where they have comparative advantages, into sustainable development programmes.

Outcome
— Increased use by Member States of nuclear and isotopic techniques for effecting improvements in food security, human health, water resources management, managing the marine and terrestrial environments and industrial development.
Performance Indicator
— Extent of use by Member States of Agency recommended techniques and standards in food production, health care, diagnosis and treatment of diseases, water resource management, industrial processing and environmental studies.

Recurrent Project: Overall management, coordination and common activities

The diversity of fields covered by this major programme require efficient management and coordination at the scientific and technical levels to ensure that all activities respond to Member State needs.

Coordination and advisory activities within the major programme are necessary to ensure the linkages between constituent programmes and subprogrammes are effective and efficient. Coordination on technical issues is necessary for the relevant activities in Major Programmes 1, 3 and 6 and for managerial issues in Major Programmes 5

and 7. Cross-cutting areas, dealing with environment and quality assurance and control are important. Coordination between programmes is also needed for preparation of the Nuclear Technology Review, the Annual Report, programme performance assessment reviews, preparation of documents for the Board of Governors and General Conference and for support to the Standing Advisory Group on Nuclear Applications (SAGNA).

Coordination of programmes will ensure that advantages are taken of programme synergies to utilize resources efficiently and ensure that topics and issues are dealt with holistically.

Coordinated research projects are managed to ensure that activities respond fully to Member State and programmatic needs and to the overall strategy of the Agency.

Main outputs: The main outputs will be smooth delivery with outputs from individual programmes coordinated where these are of a cross-cutting nature. Programme reporting is accurate and timely.

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources

Table 11

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
2.	Overall management, coordination and common activities	746 600	-	-	745 600	-	-
	Total	746 600	-	-	745 600	-	-
E.1.01	Development of integrated plant nutrient and water management practices for increasing soil fertility and crop yields	247 200		-	219 000		-
E.1.02	Development of soil management and conservation practices for sustainable crop production and environmental protection	971 600		-	788 900		-
E.1.03	Induced biodiversity for breeding crops with increased adaptability to drought, salinity and other constraints	928 100		-	914 100		-
E.1.04	Identification, characterization and transfer of mutated genes	1 085 700		-	983 300		-
E.1.05	Identification and development of crop germplasm with superior resource use efficiency and nutritional value and adapted to harsh environments	1 818 000		-	1 747 800		-
E.1.06	Improved procedures and capacities for risk assessment and management of major trade related insect pests of crops through the integration of the sterile insect technique (SIT) in control programmes	1 262 100		-	1 298 800		-
E.1.07	Sterile insect technique and other nuclear based biological control methods to manage risks to agriculture and the environment from exotic insect plant pests	1 039 500		-	1 095 400		-
E.1.08	Technologies and practices for efficient agricultural water use and conservation	709 500		-	912 000		-
	Subprogramme E.1: Sustainable Intensification of Crop Production Systems	8 061 700	-	-	7 959 300	-	-
E.2.01	Technologies for integrated management of natural resources in small scale dairy production systems	255 400		-	63 000		-
E.2.02	Technologies for reducing risk from transboundary livestock diseases and those of veterinary public health importance	756 600		-	757 900		-
E.2.03	Molecular techniques for improving productivity in smallholder livestock systems	1 502 400		-	1 652 600		-
E.2.04	Strengthening expertise and capacities to integrate SIT in areawide integrated pest management (IPM) approaches against selected tsetse and screwworm populations	1 702 300		-	1 787 700		-
	Subprogramme E.2: Sustainable Intensification of Livestock Production Systems	4 216 700	-	-	4 261 200	-	-

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources

Table 11 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra budgetary a_/	2007 CAURBs Unfunded
E.3.01	Application of international standards on irradiation and radionuclide levels in food and agricultural commodities	806 200		-	753 000		-
E.3.02	Technologies and capacity building to identify good agricultural practices for the management of food and environmental hazards	1 584 500		-	1 695 100		-
	Subprogramme E.3: Strengthening Compliance with Food and Environmental Safety Standards through Good Agricultural Practices	2 390 700	-	-	2 448 100	-	-
	Total	14 669 100	-	-	14 668 600	-	-
	FAO Budget Amount	(2 819 000)	2 819 000	-	(2 819 000)	2 819 000	-
Programme E - Food and Agriculture		11 850 100	2 819 000	-	11 849 600	2 819 000	-
F.1.01	Energy metabolism and body composition studies	483 100	65 000	-	585 200	40 000	-
F.1.02	Mineral and vitamin metabolism studies	590 600	-	-	532 200	-	-
F.1.03	Health impact of dietary contaminants	424 600	-	-	394 100	-	-
F.1.04	Development of the sterile insect technique (SIT) for the control of malaria transmitting mosquitoes	455 900	-	-	455 900	-	-
F.1.05	Health effects of environmental and other whole-body irradiations	36 000	-	-	43 200	-	-
F.1.06	Radiation sterilization to improve tissue banking	33 800	-	-	33 800	-	-
	Subprogramme F.1: Nuclear Techniques in Nutrition and Disease Prevention	2 024 000	65 000	-	2 044 400	40 000	-
F.2.01	Nuclear medicine imaging in the management of non-communicable diseases	744 800	-	-	625 600	-	-
F.2.02	Application of positron emission tomography (PET) in molecular imaging	293 000	-	-	450 700	-	-
F.2.03	Radiopharmacology and application of new radiopharmaceuticals to the management of diseases	384 500	-	-	361 400	-	-
F.2.04	In vitro nuclear medicine, molecular biology and genomic studies applied to communicable diseases, cancer and genetic disorders	322 700	-	-	254 900	-	-
	Subprogramme F.2: Nuclear Medicine and Diagnostic Imaging	1 745 000	-	-	1 692 600	-	-
F.3.01	Establishing policy concerning cancer and radiotherapy	283 500	-	-	300 500	-	-
F.3.02	Ensuring clinical quality in radiotherapy	268 400	-	-	263 300	-	-
F.3.03	Improving access to radiotherapy	582 600	-	-	647 800	-	-
F.3.04	Optimizing advanced techniques in radiotherapy	319 000	-	155 000	269 000	-	85 000
F.3.05	Therapeutic applications of unsealed radioactive sources in the management of cancer	124 600	-	-	163 500	-	-
	Subprogramme F.3: Radiation Oncology and Cancer Treatment	1 578 100	-	155 000	1 644 100	-	85 000

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources

Table 11 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra budgetary a_/	2007 CAURBs Unfunded
F.4.01	Quality audits in radiotherapy dosimetry	453 400	-	-	444 900	-	-
F.4.02	Radiation metrology supporting the network of Secondary Standards Dosimetry Laboratories	833 700	-	190 000	808 200	-	193 000
F.4.03	Dosimetry codes of practice and guidelines for radiation measurements in radiotherapy, diagnostic radiology and nuclear medicine	351 200	-	-	387 400	-	-
F.4.04	Medical physics developments for quality assurance and clinical applications of ionizing radiation	629 300	-	-	628 400	-	-
	Subprogramme F.4: Quality Assurance and Metrology in Radiation Medicine	2 267 600	-	190 000	2 268 900	-	193 000
Programme F - Human Health		7 614 700	65 000	345 000	7 650 000	40 000	278 000
G.1.01	Exchange of information, training and cooperation with international organizations in isotope hydrology	312 000	-	-	371 600	-	-
G.1.02	Isotope methods for the assessment of groundwater sustainability	887 500	-	40 000	875 000	-	40 000
G.1.03	Development of isotope methodologies for water quality assessment and management	495 300	-	40 000	510 800	-	40 000
	Subprogramme G.1: Isotope Methodologies for the Protection and Management of Surface Water, Groundwater and Geothermal Resources	1 694 800	-	80 000	1 757 400	-	80 000
G.2.01	Development of Member State capacity for isotope analysis of hydrological samples	440 100	-	150 000	429 200	-	160 000
G.2.02	Isotope methods for the study of water and carbon cycle dynamics in the atmosphere and biosphere	813 100	-	-	761 300	-	-
G.2.03	Development of helium isotope applications for water resources management	330 200	-	-	340 400	-	-
	Subprogramme G.2: Reference Isotope Data and Analysis for Hydrological Applications	1 583 400	-	150 000	1 530 900	-	160 000
Programme G - Water Resources		3 278 200	-	230 000	3 288 300	-	240 000

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources
Table 11 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
H.1.01	Measurement and assessment of natural and anthropogenic radionuclides in the marine environment	422 100	50 000	-	422 300	50 000	-
H.1.02	Diagnosing contaminant sources and fates using nuclear and isotopic techniques	321 200	300 000	-	331 200	300 000	-
H.1.03	Quality management for monitoring marine contaminants and toxins	375 600	200 000	-	375 600	200 000	-
H.1.04	Novel methods for measuring low level radionuclide concentrations in marine samples	295 500	-	38 000	295 500	-	28 000
	Subprogramme H.1: Marine Environmental and Radiological Assessment (MERA)	1 414 400	550 000	38 000	1 424 600	550 000	28 000
H.2.01	Nuclear and isotopic studies of marine coastal zone dynamics	227 300	50 000	-	230 200	50 000	-
H.2.02	Bioaccumulation and transfer of radionuclides in coastal environments	213 200	-	-	219 400	-	-
H.2.03	Radiotracing HAB toxins and contaminants in seafood	347 700	-	-	349 400	-	-
H.2.04	Radiotracer investigations of marine ecotoxicological impacts	280 300	-	-	286 100	-	-
	Subprogramme H.2: Radioecological and Isotopic Solutions for Coastal Marine Problems (RISCMAR)	1 068 500	50 000	-	1 085 100	50 000	-
H.3.01	Isotopic studies of nutrient dynamics and algal blooms	299 100	50 000	-	303 200	50 000	-
H.3.02	Nuclear and isotopic applications to quantify ocean carbon cycling	348 700	-	-	348 700	-	-
H.3.03	Marine isotopic records and models to assess climate change	282 500	-	-	287 000	-	-
	Subprogramme H.3: Ocean Climate Coupling and Carbon Cycling (OC4)	930 300	50 000	-	938 900	50 000	-
H.4.01	Laboratory quality management activities and metrology	272 600	-	-	275 700	-	-
H.4.02	Reference materials	395 300	-	-	395 300	-	-
H.4.03	Agency Network of Laboratories for Measuring Radionuclides in the environment (ALMERA)	262 400	-	-	262 400	-	-
	Subprogramme H.4: Supporting Quality in the Analysis of Terrestrial Environmental Samples	930 300	-	-	933 400	-	-
H.5.01	Terrestrial radioecology	228 700	-	-	228 700	-	-
H.5.02	Ecotoxicology	251 500	-	-	251 500	-	-
H.5.03	Remediation strategies	237 000	-	-	237 000	-	-
	Subprogramme H.5: Assessment in Support of Sustainable Management of the Terrestrial Environment	717 200	-	-	717 200	-	-
	Programme H - Assessment and Management of Marine and Terrestrial Environments	5 060 700	650 000	38 000	5 099 200	650 000	28 000

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources
Table 11 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
I.1.01	Radioisotope production using reactors and cyclotrons	319 100	-	-	308 700	-	-
I.1.02	Quality assurance in nuclear analytical and radiochemical techniques	357 900	-	-	320 300	-	55 000
I.1.03	Development, production and quality assurance of radiopharmaceuticals	272 100	-	-	236 900	-	57 000
	Subprogramme I.1: Technology Support to Radioisotopes, Radiopharmaceuticals and Radioanalytical Services	949 100	-	-	865 900	-	112 000
I.2.01	Radiotracer technology for industrial processes and natural resources exploration	269 300	-	-	306 600	-	-
I.2.02	Radiation technology for advanced materials development, environment and healthcare	350 300	-	57 000	398 300	-	32 000
I.2.03	Development of procedures and training material for advanced industrial radiography	171 600	-	55 000	167 000	-	55 000
I.2.04	Advanced nuclear techniques for detection of landmines and bulk explosive material	145 400	-	-	173 500	-	-
	Subprogramme I.2: Radiation Technology for Industrial Applications and a Safer Environment	936 600	-	112 000	1 045 400	-	87 000
	Programme I - Radioisotope Production and Radiation Technology	1 885 700	-	112 000	1 911 300	-	199 000
	Major Programme 2 - Nuclear Techniques for Development and Environmental Protection	30 436 000	3 534 000	725 000	30 544 000	3 509 000	745 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme E. FOOD AND AGRICULTURE

Rationale: The three global goals of the United Nations for sustainable food security are: (i) ensuring access of all people to sufficient, nutritionally adequate and safe food; (ii) the continued and sustainable contribution of agriculture to economic and social progress; and (iii) the conservation and sustainable utilization of natural resources, including land, water and the genetic resource base for food and agriculture. Three thematic areas identified for priority action and considered relevant to the mandate of both the IAEA and FAO are: (i) productivity enhancement; (ii) conservation and sustainable use of natural resources; and (iii) plant, animal and consumer protection.

Various constraints to agricultural development related to the above thematic areas can be addressed effectively through nuclear techniques, which nowadays include techniques that fall within the UN definition of "biotechnology". Some of these techniques provide more precise and specific tools for characterizing and monitoring critical constraints and risks to farming systems in developing countries, including those arising from the genetic make-up of the micro-organisms, plants, animals and insects that comprise these systems. Yet others offer direct and highly effective means of reducing the risks to food chains by altering genes and functions in ways that provide agronomic or other benefits. Nuclear techniques are therefore essential or provide significant added value, both for understanding the processes that underpin the production and transformation of biophysical resources into food and agricultural products and, directly or indirectly, for manipulating these processes to increase crop and livestock productivity while conserving and sustainably using natural resources and improving food quality and safety.

The Revised Arrangements that were agreed by the Directors General of the IAEA and FAO for this programme identified the above as the three core areas of common interest with respect to nuclear applications in food and agriculture. These Arrangements also recognized the need in the years ahead to strengthen the programme's interdisciplinary capacity for producing outputs and outcomes while preserving the advantages of the disciplinary structure essential to ensure continued excellence in the programme's main spheres of competence.

Against this background, and to provide a consistent presentation for Member States of its two sponsoring organizations, the programme is now structured into three subprogrammes dealing, respectively, with crops, livestock and food safety, each offering a mix of strategic and applied research, technical cooperation and information products consistent with the Agency's Statute and FAO's Constitution and in support of their respective medium term strategies. The projects and the specific activities proposed are the outcome of substantial upstream planning, involving a variety of processes and stakeholders. These include Country Programme Frameworks, Thematic Planning, consultants meetings, external evaluations, and technology watch by the Secretariat and interactions with the key stakeholders within national agricultural ministries and the research, plant and animal protection and food control institutes that support them as well as with staff of international institutes that comprise the Consultative Group on International Agricultural Research (CGIAR). Priorities are therefore based on identified needs, comparative advantages and opportunities for incorporating nuclear techniques to improve the technology mixes available for understanding, reducing or removing constraints or risks to food and agricultural product chains in developing countries.

Objective: To enhance capabilities within Member States for alleviating constraints to sustainable food security by the application of nuclear techniques.

Outcomes
— Increased use of Agency recommended techniques, guidelines and information products in agricultural research and development programmes.
— Approval of Agency recommended norms and procedures by international organizations.
Performance Indicators
— Number of Member States using Agency recommended techniques, guidelines and products in their agricultural development programmes.
— Number of Agency recommended norms and procedures adopted and promoted by international organizations.

Specific criteria for prioritization:

— The first priority is given to projects which make significant contributions through radiation or isotopes to the creation of new knowledge and technology options for improving the efficiency and safety of food and agricultural product supply chains while conserving natural and genetic resources.

— The second priority is given to projects addressing a food and agricultural challenge that is significant globally or regionally to

maximize the opportunities for benefit sharing among Member States.

— The third priority is given to projects assisting Member States to implement the outcomes of major UN or global conferences and the standards underpinning international agreements.

Subprogramme E.1. Sustainable Intensification of Crop Production Systems

Rationale: In many countries the sustainability of efforts to achieve development goals through agriculture and particularly through intensification and diversification of cropping systems and increased international trade in crop products is undermined by: various forms of soil degradation, lack of suitable plant genetic resources, low yielding crops, poorly adapted to harsh environments, or producing low quality products, and damage caused by insect pests and diseases. Identifying the causes, understanding the dynamics and finding solutions to these constraints requires access to the appropriate diagnostic and monitoring tools and plant production and protection enhancing technologies. It also depends on the technical and managerial capacities within national agricultural research systems (NARS) and plant protection institutions to develop, adapt and use these: (a) for assessing the risks to production systems, the environment and trade associated with current or new agricultural practices; (b) for testing and promoting the adoption by extension services and producers of practices and technologies that better serve to optimize the tradeoffs between intensification, conservation and sustainable use of natural resources and trade; and (c) for generating the science based information needed by regulators and government authorities for setting standards and regulations and making other policy level decisions.

Nuclear techniques provide essential or value added information and technology for defining and alleviating constraints and for providing opportunities for intensifying and diversifying cropping systems and promoting international trade of agro-products while conserving and using natural resources in a sustainable manner. These include: radioactive and stable isotopes and neutron moisture probes to measure the sources and rates of uptake and losses of major nutrients and water and the dynamics of critical processes within soils such as organic matter turnover and erosion; mutation and molecular marker techniques for widening the diversity of plant genetic resources and developing new varieties of food and industrial crops with improved yield, value-added traits and tolerance to stresses; and the sterile insect technique (SIT) for controlling major trade related and/or exotic crop insect pests.

In line with Article II of the Statute and in response to the continued acknowledgement by developing Member States of the value of nuclear techniques for improving the performance of their agricultural sector to meet socioeconomic needs, this subprogramme provides the scientific and technical guidance and coordination between the Agency, FAO and national and international partners to develop and conduct comparative assessments and deploy these and other nuclear techniques within the framework of national land and water management, crop improvement and plant protection research and technology transfer programmes.

Objective: To enhance Member State capabilities to sustainably intensify and diversify crop production systems by developing and deploying nuclear techniques that promote the conservation and sustainable use of soil, water and plant genetic resources and integrated management of insect pests.

Outcomes
— Improved soil conservation practices identified through monitoring soil loss using Cs-137 and other fallout radionuclides.
— Increased availability and exchange between Member States of advanced breeding lines with improved and diversified traits.
— Increased use by Member States of SIT in area wide interventions against fruit flies, moths and other major crop pests.
— Increased use of improved quality control and rearing protocols, biological reagents and construction designs for insect crop pest rearing factories.
— Increased capacity in NARS to conduct participatory research and extension activities in natural resource management and mutation assisted breeding using nuclear techniques.
— Increased ability of Member States to meet national and regional demand for reliable isotope analytical services through compliance with Agency quality assurance standards.
Performance Indicators
— Number of Member States using fallout radionuclides to monitor soil loss and test strategies to arrest soil erosion.
— Number of advanced breeding lines of local crops with agronomic traits and quality characters improved by mutations.
— Number of planned or ongoing area-wide interventions programmes implementing strategic advice and enhanced capacity to integrate SIT against major crop pests.

Performance Indicators (cont'd)
— Number of insect pest rearing facilities using improved (1) rearing protocols and quality control procedures, (2) strains and (3) construction designs. — Increased number of Centres of the Consultative Group on International Agricultural Research (CG Centres) and NARS in Member States meeting the proficiency for participating efficiently in networking, CRPs, technical cooperation projects and Agency sponsored training activities.
— Number of national and regional laboratories demonstrating proficiency in (1) total N and N-15 measurements and (2) total C and C-13 measurements.

Programmatic changes and trends: Changes in Subprogramme E.1 relate mainly to the establishment of two new projects, Project E.1.08 on "Technologies and practices for efficient agricultural water use and conservation" and Project E.1.07 on "Sterile insect techniques and other nuclear based biological control methods to manage risks to agriculture and the environment from exotic insect plant pests". Activities in Project E.1.08 will be coordinated with activities in Subprogramme G.1.

Resource changes and trends: The proposed Agency regular budget resources for Subprogramme E.1 amount to €6 720 600 in 2006, reflecting an increase in the budget of €229 100, or 3.5%, compared with 2005, with a decrease of €77 000, or 1.1%, in 2007 compared with 2006. The increase in 2006 is foreseen to strengthen work on water resources management in agricultural systems and improving the adaptability of food crops to drought, salinity and other stresses. The decrease in 2007 is due to phasing out of work on improving crop productivity in acid soils.

Financial resources (2005 prices)

E.1	2005	2006	2007
Reg. budg.	6 491 500	6 720 600	6 643 600
FAO Reg.budg.	1 082 000	1 207 500	1 184 500
Total	**7 573 500**	**7 928 100**	**7 828 100**

Projects

Project E.1.01: Development of integrated plant nutrient and water management practices for increasing soil fertility and crop yields

Main outputs: This project will result in: published guidelines on estimating sources and fluxes of P in the soil-plant system using P-32 and P-33 tracers; synthesized and published data on nutrient and water dynamics in agroforestry systems; disseminated information on soil and water management and crop nutrition through a symposium and a display booth for Agency and FAO publications at the 18th World Congress of Soil Science; quality assured data on total N and N-15 analyses; a bi-annual newsletter; eight technical cooperation projects implemented and ten fellows trained at Seibersdorf and at other institutions per year.

Duration: 2001–2007

Ranking: 2

Project E.1.02: Development of soil management and conservation practices for sustainable crop production and environmental protection

Main outputs: This project will result in: quality assured data on Cs-137 analyses; synthesized and published data on nutrient and water dynamics in rice–wheat systems; data on nutrient and water dynamics in conservation agriculture; data on the effectiveness of soil conservation practices; a bi-annual newsletter; eight technical cooperation projects implemented and ten fellows trained at Seibersdorf and at other institutions per year.

Duration: 2001–2007

Ranking: 1

Project E.1.03: Induced biodiversity for breeding crops with increased adaptability to drought, salinity and other constraints

Main outputs: This project will result in: characterized mutant genetic resources and distribution of their seed, including Mutant Germplasm Repository (MGR) accessions, and banana and cassava mutant accessions available in a systematically organized collection for gene discovery (mutation grid); banana deletion mutants available for mapping purposes; updated MGR and Mutant Variety (MVD) databases; optimized and/or updated laboratory protocols and guidelines for high-throughput mutant germplasm characterization, based on micro-array technology; ten technical cooperation projects implemented and fifteen fellows trained on mutation induction, related biotechnologies and genomics at Seibersdorf and other advanced institutions.

Duration: 2001–2007

Ranking: 1

Project E.1.04: Identification, characterization and transfer of mutated genes

Main outputs: This project will result in: entry into breeding programmes of newly characterized improved mutant lines for quality traits such as bread making (wheat/Leymus), fruit colour and carotenoid content (tomato and pepper), aroma and waxes (rice), fibres (cotton), oils and fatty acids (Brassica); DNA fingerprinted mutant varieties ensuring a unique index for application and protection of breeders' rights; an updated manual on mutant germplasm characterization using molecular markers, containing new sections on biostatistics, bioinformatics and

high-throughput techniques such as micro-arrays and Targeting Induced Local Lesions in Genomes (TILLING); 40 scientists from Member States trained in the applications of mutation induction and molecular markers in plant breeding through two interregional training courses held at Seibersdorf, ten technical cooperation projects implemented and ten fellows trained on mutation induction and molecular marker technology for plant breeding at Seibersdorf and at other institutions.

Duration: 2001–2007

Ranking: 1

Recurrent Project E.1.05: Identification and development of crop germplasm with superior resource use efficiency and nutritional value and adapted to harsh environments

Main outputs: This project will produce: enhanced germplasm and advanced breeding lines of food and industrial crops, quality assured data on total C and C-13 analyses; isotope and molecular techniques for screening large populations of crop germplasm for superior agronomic water use efficiency under saline and drought conditions; validated isotopic methods for characterizing plant tolerance to nutritional stress; salinity and drought tolerant rice and wheat genotypes identified by C-13 isotope discrimination; data on tolerance of cereals to nutrient imbalances; two newsletters; 15 technical cooperation projects implemented; and 15 fellows trained at Seibersdorf and at other institutions trained per year.

Ranking: 1

Project E.1.06: Improved procedures and capacities for risk assessment and management of major trade related insect pests of crops through the integration of the sterile insect technique (SIT) in control programmes

Main outputs: This project will result in: medfly genetic sexing strains and DNA reference materials; standard operating procedure for codling moth rearing; a publication on the use of nuclear techniques for the production of natural enemies; a TECDOC on improved attractants for fruit flies; an expanded and updated fruit fly worker database; information disseminated through a newsletter; 18 technical cooperation projects implemented and 34 scientists/plant protection personnel trained at Seibersdorf and other institutes.

Duration: 2002–2008

Ranking: 1

Project E.1.07: Sterile insect technique and other nuclear based biological control methods to manage risks to agriculture and the environment from exotic insect plant pests

Main outputs: This project will result in: a video on cactus moth biology, damage and control; improved rearing methods for Anastrepha fraterculus and Bactrocera oleae; QC profile for Bactrocera dorsalis Oriental fruit fly sexing strain; reports on radiation biology for Cryptophlebia leucotreta and Cactoblastis cactorum); a draft technical and economic model to predict the minimum area for SIT; five technical cooperation projects implemented and ten scientists/plant protection officers trained at Seibersdorf and other institutes.

Duration: 2006–2014

Ranking: 2

Project E.1.08: Technologies and practices for efficient agricultural water use and conservation

Main outputs: This project will result in: guidelines on crop water productivity and methodologies to measure various sources, flow paths and losses of water through crops and soils; data on crop water use and water balance for small scale irrigation systems and water saving technologies; data on shallow groundwater recharge, crop water transpiration and evaporation; better strategies, simulation models and decision support systems for irrigation scheduling and design of cropping systems to reduce unproductive water losses; a bi-annual newsletter; five technical cooperation projects implemented and ten fellows trained at Seibersdorf and other institutions per year.

Duration: 2006–2012

Ranking: 1

Subprogramme E.2. Sustainable Intensification of Livestock Production Systems

Rationale: Systems of livestock production in developing countries are becoming progressively more intensified as producers and traders respond to the increasing demands of higher income earning consumers within urbanized societies for milk, meat and other livestock products. At the same time, government authorities and their institutions are having to grapple with the risks accompanying this “intensification” and in particular with the challenges of how to increase productivity without degrading the feed and genetic resources upon which production depends, and of ensuring that diseases, particularly those of a transboundary nature and which impact on trade, veterinary and human health are brought progressively under control or eradicated. To

succeed, they need to be able to assess and manage both the risks and the opportunities arising from intensification. This, in turn, requires capacities to develop, adapt and foster the application of the appropriate production and protection-enhancing technologies as well as sound and mutually supportive policies for their use at national levels; increasingly these must be consistent with internationally accepted standards and guidelines.

The sterile insect technique (SIT) and isotope and related biotechnological methods (RIA, ELISA, PCR and molecular markers), when appropriately integrated with other methodologies, provide substantial added value to national and international efforts to enhance livestock productivity and protect human health and the environment through more effective feed and genetic resource utilization, breeding management and control or eradication of both trade and poverty related transboundary animal diseases (TADs).

The activities included in this subprogramme involve a combination of strategic and applied research, technical cooperation and decision support initiatives targeted to help NARS, veterinary authorities, regulators and the international community. The techniques involved are advanced, involve substantial international harmonization of protocols, standards and policies and therefore build coalitions within the international community involved in both trade and poverty alleviation aspects of livestock development (e.g. FAO, WHO, OIE, AU, IFAD, AOAD, PAAT, PATTEC). The Agency's involvement in these activities is critical given that, along with FAO, it is recognized as the organization within the UN system with the required technical knowledge and experience to ensure the safe and appropriate use of the techniques concerned. Also, the General Conference resolutions requiring increased Agency support for tsetse control technology and the continued high level of requests for tsetse TC projects are evidence of the substantial needs of Member States in this area.

Objectives: To enhance Member States capabilities to sustainably intensify livestock production systems by developing and applying nuclear techniques which alleviate constraints and risks arising from poor nutrition, reproduction, diseases and insect pests.

Outcomes
— Increased use of locally available feed resources and appropriate reproductive management practices that improve livestock productivity in smallholder production systems.
— Increased ability of NARS and veterinary authorities to assess, control and manage risks from transboundary infectious diseases.
— Standard operating procedures (SOP), manuals, geographic information systems (GIS) and technology transfer used to improve rearing techniques and field activities for area-wide intervention against selected tsetse population.
— Enhanced capacity for intervention against selected tsetse and screwworm populations in internationally agreed priority areas through training courses and e-learning modules and through broadened partnerships with other mandated organizations.

Performance Indicators
— Number of livestock farms introducing demonstrated improvements in feeding and reproductive management based on methods and guidelines developed through the subprogramme.
— Number of Member States obtaining OIE recognition of freedom from rinderpest and other TADs; and number of veterinary laboratories having quality management systems in place and meeting international accreditation.
— Number of counterpart institutions applying SOPs for livestock insect pest control processes, manuals, GIS based data sets and technologies.
— Number of collaborative efforts and partnerships with and among Member State institutions and other mandated organizations resulting from enhanced capacity regarding livestock insect pest rearing centres, and livestock insect pest risk assessments involving population genetics.

Programmatic changes and trends: Project E.2.03 was initiated in 2004 to assist Members realize the opportunities available through modern isotope based molecular methods to improve livestock production and health through better characterization of animal genetic resources, disease-causing agents and rumen microbes, and by identifying DNA sequences that mark favourable traits for subsequent introgression. It is strengthened through the introduction of four new CRPs. These deal with the molecular diagnosis and epidemiological surveillance of contagious bovine pleuropneumonia (CBPP), the early detection/diagnosis of Rift Valley fever virus and the improvement of nutrition and reproduction in livestock through the introduction of genes identified using molecular marker techniques. In addition, there will be increased efforts to develop and standardize methods in Member States that improve harmonization of procedures for the control of transboundary animal disease.

In response to recent internal and external evaluations of the Agency's tsetse activities, Project E.2.04 has been redesigned and extended until 2011. It will henceforth focus on a limited number of tsetse

species, on selected tsetse populations within priority areas for agricultural and rural development, on the development and dissemination of standard operational procedures and guidelines for mass rearing and field operations and on capacity building and technology transfer. The aim is to ensure better uptake and use of the package of techniques and strategies needed to intervene effectively against tsetse using SIT. There will also be increased harmonization of approaches among the mandated organizations (AU, FAO, WHO) through PATTEC, PAAT and other forums and initiatives. Within the project, one new CRP is introduced to analyse and deal with the problem of tsetse fly viruses that adversely affect mass rearing.

Resource changes and trends: The proposed Agency regular budget resources for Subprogramme E.2 amount to €3 324 400 in 2006, reflecting a decrease in the budget of €370 200, or 10.0%, compared with 2005, with an increase of €14 500, or 0.4%, in 2007 compared with 2006. The decrease in 2006 is due to phasing out of work on radioimmunoassay and other isotope-based techniques in animal reproduction and nutrition. The increase in 2007 is due to strengthening of work on molecular markers for characterizing animal genetic resources.

Financial resources (2005 prices)

E.2	2005	2006	2007
Reg. budg.	3 694 600	3 324 400	3 338 900
FAO Reg.budg.	836 000	833 900	863 900
Total	**4 530 600**	**4 158 300**	**4 202 800**

Projects

Project E.2.01: Technologies for integrated management of natural resources in small scale dairy production systems

Main outputs: This project will result in: a publication on strategies for using an integrated approach for improving small scale market oriented dairy production; distribution of a computer database (LIMA — Livestock Information Management Application) for recording and evaluating farm data; a newsletter; between six and eight national and two regional technical cooperation projects implemented, which will further disseminate methods for evaluating and utilizing alternative feed resources; and improving the efficiency and delivery of AI services.

Duration: 2000–2006

Ranking: 2

Project E.2.02: Technologies for reducing risk from transboundary livestock diseases and those of veterinary public health importance

Main outputs: This project will result in: publication on methodologies for the diagnosis of trypanosomoses; establishment of a laboratory network using validated protocols and kits to diagnose and monitor Rift Valley fever in livestock; establishment of quality assurance systems in Member State laboratories to the OIE standards; harmonized protocols for identification and genetic analysis of foot-and-mouth disease virus strains to allow better global epidemiological understanding; improved tests for differential diagnosis of rinderpest; three to four veterinary personnel trained at Seibersdorf and 18 to 22 technical cooperation projects implemented.

Duration: 2002–2007

Ranking: 1

Project E.2.03: Molecular techniques for improving productivity in smallholder livestock systems

Main outputs: This project will result in: methodologies and guidelines for characterizing animal genetic resources in Member States, permitting their optimum utilization and conservation; monitoring and manipulating methanogenic and fibre degrading microbes in ruminants, leading to better feed utilization and reduction of methane emissions; characterizing pathogens, leading to better diagnosis and control of livestock diseases; 30 scientists trained in relevant technologies and eight to ten technical cooperation projects implemented.

Duration: 2004–2010

Ranking: 1

Project E.2.04: Strengthening expertise and capacities to integrate SIT in areawide integrated pest management (IPM) approaches against selected tsetse and screwworm populations

Main outputs: This project will result in: GIS based planning tools and information; guidelines for baseline data collection sampling; SOPs for sex separation and blood processing; e-learning modules for field cage competitiveness testing and dosimetry; harmonized concept amongst key partners; improved QC protocols and strain and blood management; improved population genetic tools for tsetse and screwworm; 11 technical cooperation projects implemented and 40 tsetse and screwworm personnel trained at Seibersdorf and other institutions.

Duration: 2006–2012

Ranking: 1

Subprogramme E.3. Strengthening Compliance with Food and Environmental Safety Standards through Good Agricultural Practices

Rationale: Ensuring the safety and quality of foods and agricultural commodities is clearly one of the essential dimensions of national responses to tackle the twin challenges of expanding urbanization and improved public health. Countries can greatly increase anti-hunger and other social and development objectives through greater access to international and domestic markets and by increasing export earnings, which includes the use of agricultural control systems that are designed to ensure quality and safety throughout the food production chain.

Parallel with these developments has been the establishment of legal instruments at the international, national and local levels aimed at improving the environmental management of agricultural systems. These are intended to prevent or reduce various aspects of environmental degradation through a combination of identifying and putting into practice operations that ensure the efficient use and safe disposal of agricultural production inputs, and having in place emergency action procedures to minimize the risk of pollution or contamination from accidents.

These objectives can be met through the development and adoption of basic principles and indicators for on-farm production and post-harvest handling and processing of food and agricultural products, i.e. good agricultural practices (GAPs) that reduce the risks to food safety and the environment from chemical, microbiological and radionuclide contamination, and for helping countries and farmers to prepare for and effectively respond to nuclear or radiological emergencies.

Nuclear and related technologies are used to control food-borne pathogens in food products and for treating plant products to control insect pests, including pests of quarantine concern. Nuclear technologies are also needed to analyse food, environmental samples such as soil and water, and commercial products such as pesticides and veterinary drugs for compliance with standards, specifications and codes of conduct relating to agricultural and processing practices. Analytical laboratories and trained staff are also essential for providing the fundamental support for scientifically based risk analyses and by providing policy makers with the necessary data to support decision making.

Objective: To enhance Member State capabilities to reduce food safety hazards and protect the environment through nuclear and related analytical techniques.

Outcomes
— Greater use of harmonized national regulations related to irradiation for sanitary and phytosanitary purposes on the basis of international standards.
— Greater use of harmonized national regulations related to radionuclide levels in foods.
— Greater use of harmonized national regulations related to good laboratory practices and analytical procedures for food contaminants and residues.
— Greater utilization of harmonized international guidance related to emergency preparedness and response to a nuclear or radiological event, including the application of appropriate agricultural countermeasures.
— Wider use of good agricultural practices by Member States for compliance with food and environmental safety standards.
Performance Indicators
— Number of Member States applying Codex Alimentarius and IPPC standards related to irradiation.
— Adoption of revised guideline levels for radionuclides in foods by the Codex Alimentarius Commission in 2006.
— Number of Member States applying international standards related to good laboratory practices and analytical procedures for food contaminants and residues, including those established by the Codex Alimentarius.
— Number of Member States applying the Radiation Emergency Management Plan, including appropriate agricultural countermeasures, in response to nuclear or radiological events.
— Number of Member States applying Good Agricultural Practices to reduce food and environmental safety hazards.

Programmatic changes and trends: There are two main changes in this subprogramme. First, the primary objective of former Project E3.01 was to provide scientific and technical support for international negotiations on new standards on irradiation as a sanitary and phytosanitary measure (by the Codex Alimentarius and under the International Plant Protection Convention respectively). This objective was attained in 2003 and as a result, IAEA, FAO and WHO agreed in 2004 that in consideration of the great achievements made by the International Consultative Group on Food Irradiation (ICGFI) in helping to establish the safety and wholesomeness of irradiated foods through its collaboration with Codex and the IPPC, there was no justification for the establishment of a successor body to ICGFI after the expiration of its

mandate in May 2004. Now, the need is to increase awareness and strengthen capacities within national and regional food safety and plant protection authorities on these new standards. It is proposed to achieve this through introduction of a new project (E.3.01) in 2006 with an expected completion in 2009.

Second, former Project E.3.02 has been significantly reformulated. It was introduced in 2001 with the primary aim of strengthening the capacities of food and pesticide control laboratories for analysing contaminants and residues covered by Codex food safety standards in compliance with national regulatory frameworks, relying essentially on "end-product testing" of products. While continuing with this approach through responding to specific requests made by Member States for technical cooperation projects, its future focus will be to develop methodologies (e.g. simple screening tests), indicators and guidelines, and through these, to advocate a shift in national strategies and actions towards protecting food chains from safety hazards at source, i.e. through good agricultural practices (GAPs). Initial work on these aspects will emphasize production systems that supply consumers with fruits, vegetables, meat and dairy products, but in keeping with the new approach, increased attention will be given to: (a) developing internationally agreed Guideline Levels for Radionuclides in Foods (with Major Programme 3); and (b) assisting countries to put in place emergency preparedness procedures to minimize the risks to food production and food security from nuclear or radiological accidents. Arising from the above, Project E.3.02 has a new title and will extend until 2012.

Resource changes and trends: The proposed Agency regular budget resources for Subprogramme E.3 amount to €1 587 400 in 2006, reflecting an increase in the budget of €141 100, or 9.8%, compared with 2005, with a further increase of €62 500, or 3.9%, in 2007 compared with 2006. The increase is to strengthen work on preparedness for nuclear or radiological emergencies and to define good agricultural practices using nuclear and related analytical methods.

Financial resources (2005 prices)

E.3	2005	2006	2007
Reg. budg.	1 446 300	1 587 400	1 649 900
FAO Reg.budg.	916 000	777 600	770 600
Total	**2 362 300**	**2 365 000**	**2 420 500**

Projects

Project E.3.01: Application of international standards on irradiation and radionuclide levels in food and agricultural commodities

Main outputs: This project will result in: an updated Annex 1 of the International Standard for Phytosanitary Measure (ISPM) Guidelines to determine single irradiation doses for specific insect groups; finalized Codex Guideline Levels for Radionuclides in Foods for Use in International Trade; increased application of international standards related to irradiation for sanitary and phytosanitary purposes; updated ICGFI and IDIDAS databases; report on Irradiation to Ensure the Quality and Safety of Prepared Meals; nine technical cooperation projects implemented; and 50 food safety and plant protection personnel trained in the application of new Codex and IPPC Standards.

Duration: 2006–2009

Ranking: 2

Project E.3.02: Technologies and capacity building to identify good agricultural practices for the management of food and environmental hazards

Main outputs: This project will result in: trained personnel in quality control of pesticide products; sample preparation techniques for instrumental analysis; and determination of pesticide residues. The revised Joint Emergency Management Plan, including appropriate agricultural countermeasures by Member States, will be finalized. Reports of CRPs will be produced.

Duration: 2006–2012

Ranking: 2

Programme F. HUMAN HEALTH

Rationale: Improved economic conditions in Member States have been followed by the development of public health care and medical services for the prevention of malnutrition, diagnosis and management of cancer, nutritional, infective and genetic disorders. Many of these significant developments are effectively addressed using nuclear techniques, for which the Agency has unique competence among United Nations organizations. Prevention and early diagnosis are the current focus of WHO, its International Agency for Cancer Research (IARC), and other UN bodies. The Agency complements and collaborates in these activities whenever nuclear technologies are applicable, and expands them to include the treatment of cancer and some benign tumours. In addition, the Agency plays an important role in all human health issues involving the inadvertent or deliberate administration of radiation for medical purposes.

Nuclear and radiation techniques are often the sole means of diagnosis and treatment, and are also widely used in a large number of other health problems as a complement to non-nuclear techniques due to their effectiveness. Nuclear medicine procedures with unsealed radioactive sources are used in vitro and in vivo for the diagnosis and management of diseases. Molecular biology based on nuclear techniques plays an effective role in the fight against communicable diseases like tuberculosis, malaria and HIV/AIDS. Radiotherapy, one of the earliest applications of radiation, remains a major cost effective modality available for cancer treatment, often in conjunction with diagnostic radiology procedures for tumour localization. Fostering and maintaining a quality assurance culture, leading to accurate dosimetry, dose delivery and patient protection, are of paramount importance in the success of the application of these techniques. In addition to these areas of radiation medicine, public health measures are also supported by activities in nutritional areas.

The HIV/AIDS epidemic is a major public health challenge for the world in general and developing countries in particular. Together with malaria, already the subject of several General Conference recommendations, AIDS is one of the major killers of humanity. Of the more than 42 million people infected globally, 70% live in Sub-Saharan Africa even though it accounts for only 10% of global population. Although AIDS was originally described in adults, it is nowadays considered one of the major killers of under-5-year-old children, especially in developing countries. Opportunistic infections and cancer susceptibility are complications of the virus-human interaction and early diagnosis, follow–up and treatment has a major role in improving quality of life and health status.

Cancer takes more lives than HIV/AIDS, tuberculosis and malaria together. By 2020 it is anticipated that there will be 15 million new cases of cancer every year, 9 million in less developed countries. The General Conference resolution GC(45)/RES/12.C requested the Agency to continue to support the building-up of indigenous capabilities in radiation therapy to cure or alleviate the life-threatening effects of cancers in developing Member States. A Programme of Action for Cancer Therapy (PACT) has been initiated with the support of the Board of Governors (GOV/2004/39) that will introduce, expand, or improve radiotherapy programmes in developing countries. This effort will be in synergy with other organizations, institutes and partners, and will seek extrabudgetary contributions of non-traditional donors to acquire the necessary resources to facilitate the implementation of the programme.

The mandate of the Agency's human health programme arises from Article II of the Statute, which states that the Agency shall accelerate and enlarge the contribution of nuclear energy to health. Member States continue to acknowledge the appropriateness of nuclear methods to address health problems, as evidenced for example by an increasing number of technical cooperation project requests. Human health continues being the largest sector of the Agency's technical cooperation programme.

Objective: To enhance the capabilities in Member States to address needs related to the prevention, diagnosis and treatment of health problems through the development and application of nuclear techniques within a framework of quality assurance.

Outcomes
— Increased capacity of Member States to use nuclear techniques in human health supported by the Agency.
— Increased application of Agency standards of practice in health programmes.
— Enhanced quality of health services based on nuclear techniques.
Performance Indicators
— Change in the number of institutions in Member States using nuclear techniques in human health.
— Change in the number of institutions in Member States applying Agency standards of practice in health programmes.

Performance Indicators (cont'd)
— Change in the number of institutions in Member States implementing quality assurance programmes in health activities based on nuclear techniques.

Specific criteria for prioritization:

— First priority is given to those projects related to supporting Member States in the implementation of basic nuclear techniques which are mature or are of services type. This is the case with most clinical activities in common use and laboratory services for quality assurance in radiation medicine.

— Second priority is given to projects that deal with establishing policies for hospital and laboratory activities and implementing emerging or advanced technologies in the various areas of radiation medicine in Member States.

— Third priority is given to projects generally dedicated to enhance or improve existing capacities in Member States in order to implement advanced techniques, as a support to specific requests from Member States, or research and development in areas of importance in a long time perspective.

Subprogramme F.1. Nuclear Techniques in Nutrition and Disease Prevention

Rationale: Nutrition is the cornerstone of preventive medicine. The global nutrition community recognizes the role of isotopic and nuclear techniques towards achieving the millennium development goals. Indeed, isotopic techniques are well suited for assessing the success of food and nutrition programmes aimed at preventing and controlling many forms of malnutrition including maternal and child health, micronutrient deficiencies, obesity, infections, etc. It is also well recognized that isotopic techniques are considered as the "gold standard methods" for setting up guidelines and recommendations regarding nutrients intake and utilization, nutrient status in the body in different population groups and settings. These activities fall within the United Nations global strategy on human nutrition based on numerous recommendations by WHO, FAO, UNICEF, among others.

Nuclear based and related isotopic techniques, radioimmunoassay, stable isotopes and isotope dilution methods, are the widely used tools for the management of problems and solutions concerning malnutrition, because of their specificity and high sensitivity and the possibility of introducing less invasive procedures when dealing with human subjects. Stable isotope usage is safe even for infants and pregnant women and many Member States are becoming aware of the usefulness of nuclear and isotopic tools for monitoring nutritional interventions.

Toxic elements enter foodstuffs due to contaminated soil, water and air. Validated techniques are required for assessing their impact in human health and to respond to questions arising in the nutritional toxicology area. Species of trace elements (e.g. chromium (VI) compounds, arsenic (III and V) compounds and methyl-mercury) are highly toxic, and therefore speciation of toxic trace elements in food is an important component of nutrition toxicology. Isotopic and nuclear analytical techniques are highly appropriate to study nutrition–pollution interactions and to assess the impact of selected contaminants as well as essential elements on human health.

Nuclear techniques are suitable to prevent a wide variety of communicable and non-communicable diseases. Malaria is the most damaging insect transmitted disease and constitutes a major obstacle to poverty reduction in Africa. The sterile insect technique (SIT) is an environmental friendly method of pest insect intervention expected to contribute to malaria prevention and control.

Tissue grafting relies on the use of sterilized bone, skin and other non-viable tissues to help in tissue restructuring or the healing of serious injuries and wounds. Radiation, to sterilize human tissue grafts, reduces the risk of infection and allows the establishment of safe medical facilities for tissue banking.

Despite the extensive scientific and medical knowledge of radiation effects, there remain important open questions with regard to the human health effects of radiation. Measuring, monitoring, and investigating mechanisms of health effects of ionizing radiation in the 0–1 Sv and 1–10 Sv ranges (e.g. Chernobyl, Techa River victims and other accidentally exposed persons) is a preventative measure to better understand the effects of radiation.

Objective: To enhance the capability of institutions in Member States in presenting and controlling malnutrition, malaria and health effects of radiation and in establishing sound programmes in radiation sterilization for tissue banking.

Outcomes
— Increased competence in Member States for applying isotopic and nuclear techniques to human nutrition and dietary contaminants.

Outcomes (cont'd)
— Enhanced capability of Member States to assess the impact of contaminants in foodstuffs on human health.
— Increased number of laboratories in Member States initiating feasibility study in SIT for malaria mosquito.
— Improved quality control of irradiated tissue allografts in Member States.
— Improved methods for treating accidentally irradiated persons.
Performance Indicators
— Number of laboratories in Member States using isotopic methods for national nutritional programmes.
— Number of laboratories in Member States capable to assess the impact of contaminants in foodstuffs on human health.
— Number of laboratories in Member States initiating feasibility study in SIT for malaria mosquito.
— Number of institutions using Agency code of practice for quality control of irradiated tissue grafts.
— Number of Member States using the improved method for treating accidentally irradiated persons.

Programmatic changes and trends: There is greater emphasis in the area of nutrition on preventive aspects that reflects the new thematic structure of the programme. For example, preventive health care for HIV/AIDS infected subjects will be studied. Activities on weight loss prevention for patients receiving radiotherapy for cancer will be undertaken. In addition, a CRP on diet related chronic diseases will be developed. Activities have been planned in synergy with WHO so as to complement their programmes and avoid overlapping. Activities on education and capacity building, for example development of manuals, syllabuses and distance learning modules, will be developed further.

Activities focusing mainly on air pollution monitoring were phased out, whereas activities addressing direct human exposure to toxic elements have been strengthened by initiating and implementing new activities to assess exposure of children and pregnant women to toxic elements (arsenic, mercury, lead, etc.).

To reflect the change in programme structure, the following projects have been incorporated into this subprogramme, thus bringing together all activities related to disease prevention: The use of radiation sterilization for the safe use of tissue allografts (previously included in Project F.2.02 of the former Subprogramme F.2);

— Radiobiological research on health effects from environmental or accidental exposures (previously included in Project F.2.02 of the former Subprogramme F.2); and

— Development of laboratory procedures for the SIT mosquito technique aimed at preventing malaria (previously described under Project F.1.05 of the former Subprogramme F.1).

Resource changes and trends: The proposed resources for Subprogramme F.1 amount to €1 988 100 in 2006 and €2 008 100 in 2007, reflecting initially a decrease in the budget of €287 700, or 12.6%, compared with 2005, and then an increase of €20 000, or 1.0%, in 2007 compared with 2006.

Due to the restructuring of Subprogrammes F.1, F.2, and F.3, it is difficult to present an accurate comparison with the previous budget cycle. Taking this into account, the decrease is mainly attributable to the phasing out of activities related to air pollution monitoring.

Financial resources (2005 prices)

F.1	2005	2006	2007
Reg. budg.	2 275 800	1 988 100	2 008 100

Projects

Recurrent Project F.1.01: Energy metabolism and body composition studies

Main outputs: Guidelines will be developed on the assessment of energy metabolism and body composition measurements, and on the assessment of the nutritional impact of complementary food by stable isotope techniques in infants. TECDOCs and scientific articles based on the results of completed CRPs will be published, and distance-learning modules on the application of isotope techniques in energy metabolism and body composition studies will be developed. Inputs to the planning and implementation of national and regional technical cooperation projects on energy metabolism and body composition will also be provided.

Ranking: 1

Recurrent Project F.1.02: Mineral and vitamin metabolism studies

Main outputs: Guidelines on the use of isotopic techniques to study micronutrient bioavailability and bioconversion in complementary and fortified foods will be prepared in collaboration with WHO. Scientific articles based on the results of completed CRPs will be published, and syllabuses and distance-learning modules on the use of isotopic techniques in vitamins and mineral studies will be developed.

Inputs to the planning and implementation of national and regional technical cooperation projects related to mineral and vitamin metabolism will also be provided.

Ranking: 1

Project F.1.03: Health impact of dietary contaminants

Main outputs: Scientific articles based on the results of completed CRPs will be published, and a technical manual on health impact of toxic and essential elements will be produced. Distance-learning modules on nuclear techniques in the study of health impact of dietary contaminants will be developed, and the updated databases on (a) natural matrix reference materials relevant to human health issues, and (b) nuclear analytical facilities in Member States will be made available. Input to the planning and implementation of national and regional technical cooperation projects related to health impacts of dietary contaminants and nutrients will also be provided.

Duration: 2004–2010

Ranking: 3

Recurrent Project F.1.04: Development of the sterile insect technique (SIT) for the control of malaria transmitting mosquitoes

Main outputs: The project will result in: methodologies and guidelines for the production, sexing, handling and sterilization of An. arabiensis; scientific publications and reports on progress of CRPs; improved strains and radiation protocols; state-of-the-art tools to evaluate mosquito fitness and population effects (semi-field systems); and qualified staff in Member States.

Ranking: 3

Project F.1.05: Health effects of environmental and other whole-body irradiations

Main outputs: The main outputs of this project will consist of recommendations, reports and scientific articles on health issues related to natural and human-made environmental irradiations that may affect human health. A CRP proposal will be developed on radiobiological studies of normal tissue effects in the 1–10 Sv range and higher after whole-body irradiations relevant to nuclear accidents and other radiation incidents.

Duration: 2006–2010

Ranking: 3

Project F.1.06: Radiation sterilization to improve tissue banking

Main outputs: The main outputs of this project will consist of an updated Code of Practice for radiation sterilization of tissues, updated documents on quality control and tissue banking standards, and an updated Agency web site for tissue banking, including distance learning material. Inputs to the planning and implementation of technical cooperation projects related to applied radiobiology and tissue banking will also be provided.

Duration: 2006–2009

Ranking: 3

Subprogramme F.2. Nuclear Medicine and Diagnostic Imaging

Rationale: Nuclear medicine in vivo diagnostic and therapeutic procedures are based on the use of unsealed radioactive sources linked to chemical compounds, forming radioactive tracers, which permit specific physiological processes to be selected. In medical science these procedures have been recognized as indispensable tools for the diagnosis and treatment of a large number of benign and malignant disorders. They provide functional information on a cost effective basis in comparison with other competitive technologies. Conventional radionuclide imaging methods, like planar gamma camera studies and single photon emission computed tomography (SPECT), have been in use for the past several years. The more recent positron emission tomography (PET), which can both image and measure biochemical processes, is now combined with X ray computed tomography (CT) enabling co-registration of functional/metabolic images with precise anatomic images. The incorporation of new imaging methods, combined with computerized radiation transport simulations, promises to provide unprecedented levels of accuracy, resolution and quantitation which are likely to increase the impact of treatment planning in targeted radionuclide therapy.

Molecular biology is used for the analysis of nucleic acids and proteins, which allow defining new medical parameters for communicable diseases including tuberculosis, malaria and HIV-AIDS, cancer and genetic disorders. These include prognostic markers, drug resistant profiles, rapid and reliable diagnostic tools and genotyping systems that can be applied both to humans and to infectious agents. The availability of human and other genome databases has led to the use of DNA sequences in applied research coupled to isotopic labeled probes, being the basis for the development of new drugs targets and diagnostic reagents, and for the definition of human genetic variation contributing to the finding of diseases susceptibility and drug response.

Over the years Agency’s technical cooperation and R&D activities have significantly enhanced the capabilities of many developing Member States in the field of nuclear medicine. However, because of

the rapid progress of technologies, the majority of Member States still lacks trained and qualified personnel, appropriate equipment and radiopharmaceuticals, and they need support to develop and adopt various nuclear medicine techniques as one of the peaceful applications of nuclear technologies to effectively improve public health problems and cost effectively integrate them into their overall health care system.

Objective: To enhance the capabilities of Member States to employ in vivo and in vitro nuclear medicine technologies procedures efficiently and effectively for managing their important health problems, and for undertaking related basic and clinical research.

Outcomes
— Increased use of in vivo and in vitro nuclear medicine procedures in Member States.
— Increased use of new state-of-the-art nuclear medicine equipment and procedures in the health care system in a selected number of Member States.
— Increased number of personnel practising nuclear medicine.
— Increased application of research and developmental findings in the nuclear medicine field in Member States.
Performance indicators
— Number of nuclear medicine and laboratory facilities in Member States implementing in-vivo and in-vitro nuclear medicine procedures. — Type and number of diagnostic and therapeutic radiopharmaceuticals used in Member States before and after the 2006–2007 biennium.
— Number and type of equipment including gamma cameras, PET systems, gamma probes in participating Member States before and after the 2006–2007 biennium.
— Number and type of each professionals (medical doctors, physicists, radiopharmacists, technologists) practicing nuclear medicine before and after the 2006–2007 biennium in selected Member States.
— Number of institutions and professionals from targeted countries participating in Agency's CRPs and other R&D activities before and after the 2006–2007 biennium.

Programmatic changes and trends: To reflect the change in programme structure, only those activities related to the diagnosis and management of diseases have been incorporated into this subprogramme, while the project on SIT for the control of malaria has been transferred to Subprogramme F.1, and radionuclide therapy activities related to cancer treatment have been shifted to Subprogramme F.3. To stay abreast with the current global trend in nuclear medicine and demands by Member States, the following changes in emphasis and direction have been introduced.

In vivo diagnostic nuclear medicine will continue to receive priority in planning and implementing the activities of the subprogramme as in the preceding cycle. A new project "Application of Positron Emission Tomography (PET) in the Management of Oncological, Neurological, Cardiovascular and Infective Diseases" is proposed to expand the imaging aspects of the subprogramme as PET is becoming a routine clinical practice in many countries.

Due to the importance of radiopharmacology, it is proposed to deal with this topic in a separate project, in conjunction with Subprogramme I.1, to achieve synergy and to avoid duplication. Radioimmunoassay (in vitro nuclear medicine), experimental-developmental radioimmunodiagnosis, and radioimmunotherapy will also be included in this project.

Keeping in view the importance of molecular biology and genomic studies applied to communicable diseases, cancer and genetic disorders, it is proposed to have a separate project on this application. In the 2004–2005 biennium, this aspect was combined with radioimmunoassay and immunodiagnostics.

Tele-medicine has become an essential component of modern health care. It has been shown to be efficient and cost effective, and an organ for change and betterment in developing countries. This aspect will be further strengthened.

Conventional diagnostic radiology is an area where WHO devotes considerable efforts. To avoid overlapping, joint activities will be initiated with WHO, notably in the field of education.

Resource changes and trends: The proposed resources for Subprogramme F.2 amount to €1 707 600 in 2006, and €1 657 400 in 2007. This represents an increase in the budget of €141 200, or 9.0%, in 2006, compared with 2005, with a decrease of €50 200, or 2.9%, in 2007 compared with 2006.

Due to the restructuring of Subprogrammes F.1, F.2, and F.3, it is difficult to present an accurate comparison with the previous budget cycle. Bearing this in mind, the increase can be attributed to the initiation of a new project on Application of Positron Emission Tomography (PET) in Molecular Imaging. The decrease in 2007 results from redistribution of resources to Subprogramme F.3.

Financial resources (2005 prices)

F.2	2005	2006	2007
Reg. budg.	1 566 400	1 707 600	1 657 400

Projects

Recurrent Project F.2.01: Nuclear medicine imaging in the management of non-communicable diseases

Main outputs: The main outputs will consist of scientific publications on the results of completed CRPs, and established study protocols on: monitoring tumour cell viability; diagnosing movements disorders and the use of nuclear medicine techniques for acute chest pain and diabetes. Internet based study material and standards checklist for nuclear medicine practice will also be developed, and proceedings of the "Symposium on new techniques and quality assurance in radiation medicine" will be produced. Inputs to the planning and implementation of technical cooperation projects on in vivo nuclear medicine and communication technology will be provided.

Ranking: 1

Recurrent Project F.2.02: Application of positron emission tomography (PET) in molecular imaging

Main outputs: The main outputs will consist of draft guidelines on PET in clinical practice, draft proceedings of the "Symposium on molecular nuclear medicine and radiopharmacology"; protocols on the application of PET in radiotherapy treatment; study protocols on the use of proliferation markers in cancer, and inputs to the planning and implementation of technical cooperation projects on PET molecular imaging.

Ranking: 2

Recurrent Project F.2.03: Radiopharmacology and application of new radiopharmaceuticals to the management of diseases

Main outputs: TECDOCs on the use of long lived generators for clinical applications, including working practice of safe handling of therapeutic radionuclides will be prepared, and scientific articles on the results of completed CRPs will be published. Chapters on the transfer of radiopharmacology research into clinical practice will be revised and a network of participating institutes for the CRPs on peptides in breast cancer and on vulnerable coronary plaques will be identified. In addition, inputs to the planning and implementation of technical cooperation projects on radiopharmacology in cancer-related and non-cancer-related conditions will be provided.

Ranking: 3

Recurrent Project F.2.04: In vitro nuclear medicine, molecular biology and genomic studies applied to communicable diseases, cancer and genetic disorders

Main outputs: The main outputs of this project will consist of scientific publications on the results of completed CRPs, draft recommendations on the use of molecular techniques, established study protocol for lymphomas, and inputs to the planning and implementation of technical cooperation projects on molecular biology and immunodiagnostics.

Ranking: 2

Subprogramme F.3. Radiation Oncology and Cancer Treatment

Rationale: The incidence of cancer is increasing dramatically in the developing Member States. It is estimated that between 2005 and 2025 approximately 100 million patients will require radiotherapy for cure or palliation but with present capacity less than a quarter of them will have access. It is important to raise awareness of this growing crisis and provide the means for Member States to establish policy with regard to cost effective and evidence-based cancer therapy in the context of comprehensive national cancer control programmes. The new organization of the projects within the subprogramme and the many activities in partnership with other key organizations, e.g. WHO and IARC, also respond to SAGNA recommendations.

If improperly applied, however, radiotherapy can do more harm than good. Therefore, it is very important to ensure quality. Tools for review of clinical quality will be developed and made available to Member States, as will guidelines and tools for the proper maintenance of radiotherapy facilities. This is responsive to the International Action Plan for Radiological Protection of Patients.

Thousands of radiotherapy systems, and the trained staff to operate them, are needed to cope with the growing crisis in cancer treatment in Member States. However, at present in many countries even the existing technology is underutilized. Increasing the human resources substantially by education and training, replacing weak radiotherapy sources and upgrading equipment for increasing its utilization is important, as is the scientifically rigorous testing of therapy protocols appropriate for resource-limited settings, with wide adoption of those that are evidence-based.

Many new physical, biological and pharmaceutical tools have become available in recent years that promise to make radiotherapy safer and more effective. Unbiased evaluation of their current role and future potential is required for incorporation into routine practice. Technical guides and guidelines will

be produced for the radiotherapeutic treatment of common cancers in resource-limited settings. Imaging of the cancer (e.g. by CT scanning and PET scanning) is a crucial component of accurate radiotherapy. Therefore, studies will be initiated and tools developed for strengthening the capabilities of Member State institutions in image-based radiotherapy. Continuing professional development of health care professionals in radiotherapy will be emphasized so that they may use the newer tools appropriately for the patients' benefit.

The Agency has a very important role to play in improving cancer treatment worldwide due of the crucial role of radiotherapy in cancer treatment. However, the magnitude of the problem faced by developing Member States with regard to the provision of appropriate cancer treatment dwarfs available Agency resources. In June 2004 the Board of Governors approved a new approach — a Programme of Action for Cancer Therapy (PACT) — that would raise public awareness of the impending crisis in developing countries due to the rapid increase in cancers and the scarcity of radiotherapy equipment and expertise, and would seek to increase the Agency's capacity for assisting Member States in providing appropriate cancer treatment.

The magnitude of this subprogramme will be greatly influenced by the extrabudgetary resources that may become available under PACT (e.g. public information activities, guides to essential practice for most of the common cancers, and research projects evaluating many kinds of mechanistically-based modifications of radiotherapy).

Objectives: To enhance Member States' capabilities to establish sound policies concerning radiotherapy and cancer treatment, ensuring the optimized delivery of radiotherapy, increasing access to cancer treatment and ensuring the effective and efficient utilization of current and future advanced cancer treatment technologies.

Outcomes
— Increased ability of Member States to deal with the growing crisis in cancer care by deploying radiotherapy in a systematic and cost effective manner, including radiotheraphy techniques.
— Optimized and trouble-free operation of radiotherapy facilities in Member States for treating cancer patients.
Performance Indicators
— Number of institutions in Member States adopting policies produced by the Agency for placing radiotheraphy in the interest of comprehensive cancer control.

Performance Indicators (cont'd)
— Number of institutions in Member States using Agency guidance for the treatment of patients with the most common cancers. — Number of institutions in Member States using Agency tools for education and training of professionals in radiotheraphy. — Number of institutions in Member States using Agency tools for implementing advanced techniques in radiotheraphy and training health care professionals in their use.
— Number of institutions in Member Sates with qualified health care professionals trained in clinical quality assurance in radiotherapy. — Number of institutions in Member States adopting clinical QA audits using methodologies based on Agency standards.

Programmatic changes and trends: All projects and most activities are cross-cutting with partners in the Alliance for Global Cancer Control (AGCC) and/or within the Agency. The continuing regular budget activities as well as technical cooperation activities have been incorporated into the new organization of projects, in accordance with the template employed by WHO for all essential health technologies, for better coordination with major partners such as the WHO and IARC. This subprogramme has also been expanded to reflect the fact that it is the predominant component of the Agency's proposed and expanded PACT. Depending on the availability of extrabudgetary resources, the following activities will be carried out:

— Guides to essential oncological and radiotherapeutic practices in resource-limited settings will be developed for each of the most common cancers in developing countries;

— Public information activities in the fields of cancer control and radiotherapy will be carried out;

— Studies will be performed in applied radiation biology (to include novel radiation sensitizer and protector molecules, gene expression profiling, growth factors, vascular modifiers, protein mass spectrometry, modulation of immune responses, stem-cell therapeutics, etc.);

— Studies will be initiated to evaluate advanced technologies in radiotherapy (functional imaging, intensity modulated radiotherapy and tomotherapy with biomathematically determined hypofractionation, automated segmentation, uncertainty analysis, etc.); and

— Diagnostic imaging studies will be initiated and tools developed in the field of image-based radiotherapy.

To reflect the change in programme structure, activities related to the treatment of cancer by unsealed radioactive sources (previously described

under Project F.1.02 of the former Subprogramme F.1) have been incorporated into this subprogramme (Project F.3.05), thus bringing together all activities related to cancer therapy. On the other hand those activities related to disease prevention, such as tissue banking and environmental aspects of radiation biology, which were previously included in Project F.2.02 of the former Subprogramme F.2 have been transferred to Subprogramme F.1.

Resource changes and trends: The proposed resources for Subprogramme F.3 amount to €1 550 100 in 2006, and €1 614 100 in 2007. This represents an increase in the budget of €376 400, or 32.1%, in 2006 compared with 2005, and a further increase of €64 000, or 4.1%, in 2007 compared with 2006.

Due to the restructuring of Subprogrammes F.1, F.2, and F.3, it is difficult to present an accurate comparison with the previous budget cycle. The credible implementation of a high priority radiotherapy programme necessitates an increase in the regular budget. The increase can be attributed to the allocation of additional human resources needed to carry out the activities in this area, and to the increased level of funding for new CRPs and activities related to education and development of guidelines. To meet the expectation of Member States in this area, funds in addition to the proposed regular budget will be required. To this end, the Agency has launched the Programme of Action for Cancer Therapy (PACT) for the mobilization of extrabudgetary resources from non-traditional donors.

Financial resources (2005 prices)

F.3	2005	2006	2007
Reg. budg.	1 173 700	1 550 100	1 614 100

Projects

Project F.3.01: Establishing policy concerning cancer and radiotherapy

Main outputs: Comprehensive cancer control guidelines will be produced for regional and national purposes. There will be an improved database of radiotherapy equipment worldwide (DIRAC). Documents will be produced to increase the public's awareness of cancer control using radiotherapy. Seminars will be organized to increase the knowledge of regulators, health care executives, and WHO country and regional officers. Inputs to the planning and implementation of technical cooperation projects on establishing policies related to caner and radiotherapy will be provided.

Duration: 2006–2010

Ranking: 2

Recurrent Project F.3.02: Ensuring clinical quality in radiotherapy

Main outputs: The main outputs of this project will consist of the production of a guide for auditors on clinical QA audits, contributions towards the proceedings of a symposium on new techniques and QA in radiation medicine, and inputs to the planning and implementation of technical cooperation projects related to clinical quality in radiotherapy.

Ranking: 2

Recurrent Project F.3.03: Improving access to radiotherapy

Main outputs: A document will be produced on cancer care, emphasizing women's and children's issues. Comprehensive guides will be produced describing essential practice in resource-limited settings for common cancers. Resource-sparing clinical research protocols for a variety of common cancers will be established through clinical trials. Syllabuses and teaching texts for education in radiation oncology and radiation biology will be produced. Inputs to the planning and implementation of technical cooperation projects related to radiotherapy and applied radiobiology will be provided.

Ranking: 1

Project F.3.04: Optimizing advanced techniques in radiotherapy

Main outputs: Research results and publications will be produced on improving outcomes in radiotherapy by incorporating new physical and biological tools. A document on the status of protons and heavier ions therapy will be developed, and a report on the evaluation of intensity modulated radiation therapy (IMRT) as a treatment modality in radiotherapy will be written jointly with Subprogramme F.4. Research results and publications will be produced on: (a) the treatment and mechanisms of resistance of cervix cancer in AIDS patients; (b) long term normal tissue effects of chemoradiotherapy in common cancers; and (c) improving outcomes in radiotherapy by novel biotechnologies: prediction of responses and the use of new radiosensitizers, as well as modification of late reactions including stem cell therapeutics. Toolkits for clinical and biological research will be developed and training provided. Inputs to the planning and implementation of technical cooperation projects dealing with radiotherapy and applied radiobiology will be provided.

Duration: 2006–2010

Ranking: 1

Project F.3.05: Therapeutic applications of unsealed radioactive sources in the management of cancer

Main outputs: The main outputs of this project will consist of established study protocols for the CRP on metastatic bone pain palliation, and inputs to the planning and implementation of technical cooperation projects related to cancer therapy.

Duration: 2006–2008

Ranking: 1

Subprogramme F.4. Quality Assurance and Metrology in Radiation Medicine

Rationale: The subprogramme deals with the quality assurance (QA) aspects of the use of radiation in medical applications to ensure safety and effectiveness, and with the science and technology involved in dosimetry and medical radiation physics. The accurate measurement of radiation dose is important in various applications such as radiation oncology, diagnostic radiology, nuclear medicine and radiation protection. The subprogramme supports the activities of Member States in these areas by ensuring international consistency in physical standards for dosimetry and by monitoring the implementation and dissemination of those standards to end-users. Furthermore, it contributes to the increase in scientific and technical capacity in medical radiation physics worldwide by fostering research and development and playing a role in the education of medical physicists and other health care workers who deal with ionizing radiation. The Agency has signed the Mutual Recognition Arrangement (MRA) setting up the formal framework to provide Member States with radiation measurement technology in such a way that their dosimetry measurements are linked to the International System (SI). The calibration of radiation measurement standards for Secondary Standards Dosimetry Laboratories (SSDLs) provides the only independent method for Member States that are not signatories of the Metre Convention to establish this link to the SI. Dosimetry verification services are also provided in regular dosimetry comparisons and audits both for SSDLs and for the end-user institutions engaged in radiotherapy, diagnostic radiology and radiation protection. The primary beneficiaries of these activities are hospital patients undergoing radiation therapy and medical procedures involving diagnostic radiology and nuclear medicine, and radiation workers and the general public that benefit by improved dosimetry practices for the standardization of radiation protection measurements.

Objectives: To enhance the capability of Member States in dosimetry and medical radiation physics required for the safe and effective use of nuclear technology in medical applications; and in radiation protection through the use of calibrated standards for accurate and traceable dose records.

Outcomes
— Increased competence in QA in institutions of Member States and in dosimetry in the IAEA/WHO Network of Secondary Standards Dosimetry Laboratories due to the availability of calibrated radiation measurement standards.
— Enhanced quality assurance and dosimetry in Member States through a dose auditing and verification service.
— Increased capability of Member States for the optimized diagnosis and treatment of patients due to the transfer of technology for dosimetry and medical radiation physics.
Performance indicators
— Number of facilities in Member States using the Agency's calibration services for national measurement standards.
— Number of facilities in Member States having dosimetry calibrations for radiotherapy and diagnostic radiology beams, and/or radioactivity determinations for nuclear medicine applications audited, verified and any discrepancies corrected.
— Number of Member States using Agency quality assurance procedures and dosimetry codes of practice, and developing national dose quality audit programmes following Agency guidelines.

Programmatic changes and trends: The Agency has responded to the dramatic increase predicted for cancer incidence in developing countries by launching its Programme of Action for Cancer Therapy (PACT). The demands for Agency assistance will surely increase and the need for more services and infrastructural support will naturally follow these trends. In response, there will be an increased effort to assist Member States in educating more medical physicists in developing countries and to provide them with the methodologies to promote the implementation of nuclear technology safely and effectively. There will also be new CRPs and strengthened medical physics activities in imaging sciences and nuclear medicine particularly in the area of instrumentation and radiopharmaceuticals.

In response to increased Member State requests for additional dosimetry calibration and auditing services, the Agency is in the process of expanding the Dosimetry Laboratory at Seibersdorf. Once the construction is completed (2005), new radiation equipment will be installed and commissioned so as to train additional staff and provide the needed services.

Assistance will be provided to secondary laboratories in Member States to establish and strengthen their measurement capabilities by providing them with radioactivity standards for use in nuclear medicine applications.

Assistance to laboratories in Member States to implement and verify measurement standards for use in calibration work in diagnostic radiology will also be provided.

Resource changes and trends: The proposed resources for Subprogramme F.4 amount to €2 234 800 in 2006, and €2 236 000 in 2007, reflecting a decrease in the budget of €540 200, or 19.5% in 2006 compared with 2005, and an increase of €1 200, or 0.1%, in 2007 compared with 2006.

The decrease results from the completion of construction of the shielded irradiation room which is partly offset by allocating funds for additional staff needed to perform calibration services to meet the increased demand from Member States, and for the purchase of radiation equipment for the new shielded irradiation room.

Financial resources (2005 prices)

F.4	2005	2006	2007
Reg. budg.	2 775 000	2 234 800	2 236 000

Projects

Recurrent Project.F.4.01: Quality audits in radiotherapy dosimetry

Main outputs: This project will result in: the IAEA/WHO TLD postal dose quality audit service for verification of the accuracy of dosimetry in radiotherapy; the resolution of discrepancies in beam calibration uncovered in dosimetry audit programmes; and updated computerized database containing TLD results for the IAEA/WHO International Dose External Audits.

Ranking: 1

Recurrent Project F.4.02: Radiation metrology supporting the network of Secondary Standards Dosimetry Laboratories

Main outputs: This project will result in: Agency certificates of calibration for radiation measurement equipment; Agency certificates of comparison and verification services; SSDL Newsletter (including its web version); updated database on the activities of the SSDL network; results of comparisons of radiation measurement standards conducted with international metrology organizations; and trained personnel for developing Member States.

Ranking: 1

Project F.4.03: Dosimetry codes of practice and guidelines for radiation measurements in radiotherapy, diagnostic radiology and nuclear medicine

Main outputs: This project will result in: reports on methodologies to disseminate standards of radioactivity to SSDLs, on testing the implementation of the new code of practice for X ray dosimetry in diagnostic radiology and on the development of techniques at SSDLs for the dissemination of standards for absorbed dose to water; training material for education programmes in dosimetry and medical radiation physics as well as guidance to Member States for setting up and developing laboratories that become part of the SSDL network.

Duration: 2005–2009

Ranking: 2

Recurrent Project F.4.04: Medical physics developments for quality assurance and clinical applications of ionizing radiation

Main outputs: This project will result in reports on: the development of procedures for use in TLD based quality audits for radiotherapy dosimetry in non-reference conditions; in vivo dosimetry; quality assurance for dosimetry calculations in radiotherapy; dosimetry audits in diagnostic radiology; and quality control of the instrumentation used in nuclear medicine.

Ranking: 3

Programme G. WATER RESOURCES

Rationale: Population and economic growth continue to push water demands to the limit of available supplies in many parts of the world. Although a large portion of the earth's fresh water is renewed by the hydrological cycle, it is still a finite resource and, unlike many other strategic resources, fresh water has no substitutes in most of its uses. The United Nations General Assembly in December 2003 proclaimed 2005–2015 to be the International Decade for Action "Water for Life". This resolution followed a number of high level declarations in 2002 and 2003. The Johannesburg Plan of Implementation (JPOI), emerging from the 2002 World Summit on Sustainable Development (WSSD), adopted the water related goals of the United Nations Millennium Declaration and called for the following actions to protect and manage the water resource base for social and economic development:

— Improvement of water resource management and scientific understanding of the water cycle;
— Support for developing countries in monitoring and assessing the quantity and quality of water resources;
— Effective coordination among various international and intergovernmental bodies and processes working on water related issues.

The Ministerial Conference at the 3rd World Water Forum (Kyoto, Japan, March 2003) re-affirmed the JPOI and the G-8 Summit in Evian, France (October 2003) also committed itself to work for the successful implementation of the JPOI, specifically including the above elements in the G-8 Action Plan for water.

The Agency, as the lead UN organization with a mandate in promoting isotope applications, contributes uniquely through the use of isotope technologies to the goals of the JPOI. In particular, isotope techniques help determine the adequacy of water supplies, help develop strategies for optimizing resource management through a better understanding of aquifer recharge–discharge relations, and help improve the understanding of how the hydrologic cycle operates and may be altered by natural climate variability and the world's increasing use of finite water supplies. The research and development activities in the programme are complementary to those identified in the general area of hydrology and are focused in areas where isotopes have a comparative advantage. Programme scope and implementation strategy are being coordinated with other national and international organizations active in the water sector, as well as with related programmes of the Agency, such as the marine environment, food and agriculture, and technical cooperation programmes. Collaborative programmes with the WMO, UNESCO, World Bank, FAO and UNEP have been strengthened in recent years and are expected to become more so in the current cycle. The Agency's continued involvement in extending the use of isotope hydrology has been duly recognized by the Member States through a number of General Conference resolutions, the most recent being GC(47)/RES/16. In addition, substantial Member State interest in the programme is indicated by substantial and increasing number of requests for technical assistance.

Objective: To improve the sustainable and integrated management of water resources by Member States through the use of isotope applications.

Outcome
— Enhanced availability and use of isotope applications for water resource management and related policy development supported by isotope data from Member State laboratories.
Performance Indicators
— Isotope methodologies developed, adapted or tested with the Agency's assistance and used in Member States. — Isotope data, meeting the Agency's quality assurance standards, provided by Member State laboratories.

Specific criteria for prioritization:

— First priority is given to projects which respond directly to internationally agreed goals and targets for water resource management, such as the Millennium Development Goals and the Johannesburg Plan of Implementation, as reflected in General Conference resolutions.
— Second priority is given to projects which are related to Member State requests expressed in General Conference resolutions and/or in technical cooperation proposals.
— Third priority is given to projects on the development of new applications.

Subprogramme G.1. Isotope Methodologies for the Protection and Management of Surface Water, Groundwater and Geothermal Resources

Rationale: The global per capita availability of renewable water resources declined between 1950 and 2000 by 58% — to its current level of approximately 6560 cubic metres per capita per year (m^3/c/yr). Between 2000 and 2015, it is expected to drop by an additional 15%, to 5560 m^3/c/yr, as world

population climbs toward a projected 7.2 billion. Besides population, anthropogenic activities (irrigation, industry, urban settlements) induce pollution and contribute to declining availability of water resources. Groundwater continues to be a major source of fresh water for drinking and irrigation worldwide. In many cases, groundwater from non-renewable aquifers is being used to increase food production, making both the water supply and food production unsustainable. Deep groundwater at depths of thousands of metres can be a source of geothermal energy and is being used to meet the energy demands in many countries. Planners and managers in Member States need an improved knowledge base of hydrological information to make appropriate decisions for the sustainable management of their surface and groundwater resources and isotope techniques offer cost effective means for obtaining this information. In particular, isotope techniques provide a means for mapping renewable and non-renewable groundwater resources, improved irrigation management by optimizing the efficiency of irrigation water use, understanding the fate and transport of nutrients and other agricultural contaminants in rivers, lakes and aquifers, as well as for facilitating the management of transboundary rivers and aquifers. Coordinated research, while helping to develop, test and adapt isotope techniques under a variety of hydrogeological conditions, strengthens the capacity of Member State institutions for research and use of these techniques. The Agency's Contracts Programme provides an excellent mechanism for bringing together Member State institutions and other UN agencies to jointly study issues of international concern that are beyond the scope of national research institutions.

Objective: To develop methodologies and enhance the use of isotope techniques by Member States for the sustainable management of water resources.

Outcome
— Enhanced availability and use of isotope applications in Member States for assessing and managing water resource quantity and quality.
Performance Indicator
— Isotope methodologies developed, adapted or tested with the Agency’s assistance and used in Member States.

Programmatic changes and trends: Proposed changes for 2006–2007 are based upon lessons learned from implementation of the 2002–2003 programme, anticipated results of the 2004–2005 programme, various resolutions of the General Conference and recent international developments. These changes will focus subprogramme activities on developing global datasets and data products for hydrological applications where isotopes have a comparative advantage and the Agency plays a unique role as an international organization. Established methodologies for use in surface water, groundwater and geothermal resource management will continue to be transferred to Member States through the technical cooperation programme.

Four of the five projects presently active in Subprogramme G.1 are to be completed by 2005. As a result, isotope methodologies would have been improved or developed for monitoring the impacts of long term exploitation of groundwater, pollution and salinization of aquifers, and assessing submarine discharge of freshwater. In addition, Member States would have available to them a significant number of trained scientists and a variety of teaching and training materials to conduct further training.

The project on exchange of information and training in isotope hydrology (previously G.1.04) is proposed to be extended through the 2006–2007 cycle as Project G.1.01. This project has created new mechanisms for imparting training and capacity building. Much remains to be done, however, to spread the incorporation of isotope hydrology in university curricula and to strengthen cooperation with other agencies. In the 2006–2007 cycle, new training products will be developed and the project will be strengthened with collaborative activities with external partners.

The continuing Project G.1.05 (renamed as G.1.02) addresses isotope applications for groundwater sustainability assessment. This issue remains at the forefront of the global water agenda and the project would be further strengthened with additional activities in 2006–2007 with data products for use in scientific and field applications of isotopes in hydrology. In particular, the new activities will aim to develop tools for improved irrigation water use and efficiency. These activities will be closely coordinated with those in the food and agriculture programme.

One new project (G.1.03) will be initiated to focus on isotope applications for water quality assessment and monitoring. As indicated in the Johannesburg Plan of Implementation and the G-8 Action Plan, global monitoring of water quality is an essential means of developing appropriate capacity and policy for the protection and management of water resources. The proposed project would build upon past work on isotope tools for monitoring groundwater pollution to focus on activities related to the fate and transport of nutrients and other pollutants resulting from agricultural and industrial practices and from human settlements.

Resource changes and trends: The proposed resources for Subprogramme G.1 amount to €1 677 400 in 2006, reflecting an increase in the budget of €223 200, or 15.3%, compared with 2005, and a further increase of €60 500, or 3.6%, in 2007 compared with 2006. The increases in both 2006 and in 2007 reflect strengthening of research activities and a greater focus on applications of water management for agricultural use.

Financial resources (2005 prices)

G.1	2005	2006	2007
Reg. budg.	1 454 200	1 677 400	1 737 900

Projects

Project G.1.01: Exchange of information, training and cooperation with international organizations in isotope hydrology

Main outputs: This project will lead to an expanded network of isotope and hydrology professionals and greater cooperation between them. The outputs of the respective activities will include the proceedings of the symposium on Isotopic Applications for Sustainable Water Resource Management. News bulletins on isotopes in water resource management will be published on a regular basis and reports on meetings organized by partner organizations with Agency support related to water resource management will be provided. Teaching and training materials on isotope hydrology will be newly developed or in some cases updated and hydrologists will be trained in isotope hydrology approaches as part of efforts to incorporate isotope hydrology into university curricula. Public information materials will be developed in the frame of the identified information dissemination strategy. Finally, as part of efforts to enhance the JIIHP programme, regional strategies for integration of isotopes into the water sector will be developed including specific thematic workshops.

Duration: 2004–2009

Ranking: 2

Project G.1.02: Isotope methods for the assessment of groundwater sustainability

Main outputs: This project will result in improved approaches for assessing groundwater sustainability. The defined activities will lead to several specific outputs. Maps of fossil and non-renewable groundwater resources, particularly in South America, will be developed and reports will be produced detailing the work and achievements. Reports will be provided on the progress made in developing isotopic methods for the age dating of base flow as a means for the assessment of groundwater sustainability. Progress reports on activities to develop isotopic techniques for evaluating the efficiency of irrigation practices will also be completed. Finally, a thematic layer on fossil groundwater, as part of the world hydrological map, will be finalized.

Duration: 2004–2009

Ranking: 1

Project G.1.03: Development of isotope methodologies for water quality assessment and management

Main outputs: Project G.1.03 will result in enhanced isotopic methodologies for water quality assessment and management. The outputs will include a progress report on approaches for estimating water and nutrient budgets in river basins and wetlands. A report on progress made on establishing guidelines for using isotopic methods for quantifying groundwater exchange with lakes will also be provided. Efforts and progress made in the application of isotopes for the assessment of nutrient cycling in rivers and wetlands will be detailed in a report. Finally, country reports concerning implementation of approximately 20 technical cooperation projects will be provided.

Duration: 2006–2009

Ranking: 1

Subprogramme G.2. Reference Isotope Data and Analysis for Hydrological Applications

Rationale: An improved understanding of the time and space distribution of water on earth, or the water cycle, is imperative for the management of the renewable water resources available in rivers, lakes and shallow aquifers. The Johannesburg Plan of Implementation and the G-8 Action Plan for Water have specifically identified understanding of the water cycle as a critical part of global actions required for sustainable development. Isotopes of oxygen, hydrogen and carbon are unique tracers providing unmatched insight into the physical processes responsible for the movement of water in the water cycle. The use and development of isotope applications for understanding the water cycle requires global isotope data. The primary components of the earth's hydrologic cycle are precipitation, river flow, evaporation and transpiration from land surface. The Agency has initiated and maintained (jointly with WMO) a global network of isotopes in precipitation (GNIP) for the last 40 years which has provided critical data for simulating the water cycle in climate models. Continued isotopic monitoring of precipitation provides an ability to understand the processes influencing the amount and geographic distribution of precipitation. Thirty five per cent of continental precipitation is discharged into the oceans through

river runoff and isotope monitoring of river systems provides reference data for water balance studies and for the analysis of climate and environmental changes in large river basins. Evaporation and transpiration account for a large part of the remaining precipitation losses on the continents and the rest of the precipitation recharges shallow groundwater. A global survey of isotope contents of air moisture and leaf water on different types of vegetation would provide an effective tool for improved water balance calculations and assessment of climate change and development impacts.

Although critical to the practice of isotope hydrology, these reference data are not collected at a global scale and disseminated in public domain by any other institution. The role and need for the Agency in providing global isotopic data are well recognized by the isotope hydrology community in both the developed and the developing Member States. Through General Conference resolutions, Member States have requested the Agency to assist them in strengthening their capacity for isotope measurements. The Agency, as an impartial body, is the primary source of reference materials that are used for making precise isotopic measurements in both developing and developed Member States.

Objective: To enable Member States to produce accurate and precise isotope data for water cycle components.

Outcome
— Increased availability of high quality isotope data in precipitation and rivers provided by Member State laboratories.
Performance Indicator
— Isotope data, meeting the Agency's quality assurance standards, provided by Member State laboratories.

Programmatic changes and trends: Two out of four projects in this subprogramme are scheduled to be completed in 2005. Programme implementation from 2002–2005 would have improved or developed isotope applications for monitoring air moisture transport, and assessing submarine discharge of freshwater. Considerable improvements would have occurred in Member States' ability to measure isotope contents for hydrological applications and to provide analytical services for national or regional technical cooperation projects. However, there is a continuing need and demand for strengthening Member State capacity for isotope measurements. A new project, G.2.01, will be initiated to focus on building capacity for high quality isotope analysis in a network of laboratories. The overall aim of this project is to provide means for increased self-sufficiency in isotope analysis by Member States.

The two continuing projects in this subprogrammes address isotope applications for understanding the water and carbon cycles, for simulation of water cycle under current and future climatic conditions, and for characterizing groundwater–river interactions. They will be further strengthened with additional activities in 2006–2007. The new activities are complementary and directly related to other international programmes, including, for example, the World Climate Research Programme activities related to understanding the impact of climate change on water resources. In addition, the new activities would also aim to improve the understanding of the evaporation-transpiration processes and provide the fundamental isotope data required for developing efficient irrigation practices.

Resource changes and trends: The proposed resources for Subprogramme G.2 amount to €1 560 100 in 2006, reflecting a decrease in the budget of €117 800, or 7.0%, compared with 2005, and a further decrease of €51 000, or 3.3%, in 2007 compared with 2006. The decrease essentially reflects redistribution of resources between Subprogrammes G.1 and G.2, and the fact that major equipment purchases were budgeted for and procured during 2004–2005.

Financial resources (2005 prices)

G.2	2005	2006	2007
Reg. budg.	1 677 900	1 560 100	1 509 100

Projects

Recurrent Project G.2.01: Development of Member State capacity for isotope analysis of hydrological samples

Main outputs: The following outputs will be provided: calibrated and isotope reference materials distributed to Member States, enhanced analytical assistance to a network of Member State laboratories in support of TC projects, development of critical reference material, improved isotope databases, a progress report and a certification report concerning the certification of the Isotope Hydrology Laboratory and finally, a report on the intercomparison of stable isotope analysis.

Ranking: 2

Project G.2.02: Isotope methods for the study of water and carbon cycle dynamics in the atmosphere and biosphere

Main outputs: Outputs from the respective activities will include progress reports on the CRP on isotope tracing of biosphere–atmosphere exchanges of CO_2 and H_2O and its impact on the hydrologic cycle and climate. A progress report on the development of an analytical procedure for analysing stable isotopes in small water samples will also be completed. The Internet database will be more easily accessible via

the web site. Global datasets for GNIP will be updated and a report will be provided on the coordination meeting results concerning the CRP to enhance the understanding of processes governing isotope relationships between water and vapour.

Duration: 2004–2009

Ranking: 1

Project G.2.03: Development of helium isotope applications for water resources management

Main outputs: This project will result in a report on the progress towards improving analytical techniques for helium isotope measurements on water samples as well as a progress report on activities to improve sampling methods for helium isotope analysis of groundwater samples. Country reports on the implementation of approximately 15 technical cooperation projects will also be completed.

Duration: 2004–2009

Ranking: 3

Programme H. ASSESSMENT AND MANAGEMENT OF MARINE AND TERRESTRIAL ENVIRONMENTS

Rationale: The United Nations Conference on Environment and Development (UNCED) held in Rio in 1992 produced several agreements including Agenda 21 and the 27 principles of the Rio Declaration. In 2000, the Millennium Declaration Goals were published. Many of them addressed environmental issues and emphasized that, in order to achieve sustainable development, environmental protection efforts conducted at the international level should be an integral part of the process. In 2002 this global commitment to sustainable development has once again been readdressed at the World Summit on Sustainable Development (WSSD) in Johannesburg. Here a comprehensive review and assessment of the progress achieved since Rio has been carried out, resulting in recommendations for future actions having been made for the maintenance of a high quality of water, soil, air and other natural resources without compromising industrial and agricultural production.

In the framework of its mandate aiming at encouraging and assisting practical applications of and research on nuclear techniques for sustainable development and environmental health, and responding to the request of its Member States confirmed during a General Conference Resolution in 2003, the Agency has over the years demonstrated that these play an important role in the management of environments contaminated by radioactive and non-radioactive pollutants. Within this programme, the transfer and behaviour of radionuclides and non-radioactive pollutants in the marine as well as terrestrial environment are investigated to develop and improve transfer models used for assessments and to elaborate appropriate remediation strategies for stakeholders dealing with environmental issues.

The programme will contribute to the ecological and economic sustainability of clean and healthy environments, to the restoration of polluted environments, and to risk assessment studies and the improvement of conditions for human well-being. It will further provide scientific information and assistance to international organizations such as WHO, WMO, UNDP, UNEP, UNESCO and FAO, and enhance capacity building of Member States in Eastern Europe, South America, Africa and Asia who are experiencing elevated levels of radiation or pollution, whether of natural or anthropogenic origin.

Objective: To enhance the capability of Member States in the identification and mitigation of environmental problems caused by radioactive and non-radioactive pollutants using nuclear techniques.

Outcomes
— Improved understanding of transfer processes and fate of pollutants in Member States though the use of nuclear techniques. — Increased use of Agency recommended techniques and processes for monitoring, assessment studies and environmental management by Member States. — Identification of specific environmental contamination problems in Member States with a view to efficient mitigation.
Performance Indicators
— Number of institutions in Member States adopting Agency recommended techniques for monitoring environmental pollutants. — Number of institutions in Member States making use of Agency recommended techniques and models to assess the fate of radioactive and non-radioactive pollutants for environmental remediation purposes.

Specific criteria for prioritization:

The specific criteria for prioritization are:

— The first priority is given to projects that make significant contributions to understanding and managing radionuclides in the environment, and to the processes that regulate the dispersion and fate of pollutants.

— The second priority is given to projects that provide quality assured data on radionuclides and other pollutants in order to improve Member States' environmental knowledge and management capabilities.

— The third priority is given to assisting Member States with environmental projects that are underway, or to issues that are identified either by international organizations or as outcomes of major conferences.

Subprogramme H.1. Marine Environmental and Radiological Assessment (MERA)

Rationale: While the oceans' resources and climate regulation are ultimately of global concern, the quality and vitality of the marine environment and its living resources are critical strategic priorities for over 75% of the Agency's Member States which have coastlines with the world oceans. Recommendations made at the World Summit for Sustainable Development (WSSD, Johannesburg 2002) placed the environmental quality of the oceans, land and habitats as central to sustainable economic

development. The IAEA Marine Environment Laboratory (MEL) in Monaco, as the UN's only marine laboratory, has been providing surveys and analytical methods for radionuclides, metals and organic contaminants, as well as scientific and technical support for capacity building, to regional groups of Member States, such as those in the Mediterranean, Black Sea and South-East Asia, and to international bodies, such as UNEP (UN Environment Programme) Regional Seas, UNDP, International Waters Project, OSPAR (Oslo Paris Commission), HELCOM (Helsinki Commission), MEDPOL (Mediterranean Pollution Programme), ROPME (Regional Organization for the Protection of the Marine Environment), and GESAMP (Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection).

Comprehensive marine environmental assessments require reliable identification and measurements of natural and anthropogenic radionuclides, metals and organic contaminants. Reliable radioactive and non-radioactive contaminant data underpin checks on statutory compliance and on transboundary pollution and track environmental improvement throughout remediation programmes. By combining contaminant surveys with nuclear and isotopic tools, a more rigorous and relevant assessment of sources, fluxes, fates and ultimate impacts of regional and global marine pollution will be undertaken by MEL Monaco. This integrated approach uniquely provides the new pollution diagnostics and solution options needed by Member States committed to a sustainable future development of their marine environments. Their implementation requires support for methodological development, quality management, training in low level analyses and new integration products, including Internet accessible database on marine radionuclides and tracers, models of radionuclide transfer in the ocean and tracer applications.

Objective: To enable Member States to reliably assess current and future levels of radioactive and chemical contaminants in the marine environment, and to apply radionuclides and isotopes in diagnosing, tracking and abating marine pollution.

Outcomes
— Enhanced capability of Member States to measure radionuclides in contrasting marine environments and to assess their fate and impact.
— Increased application of nuclear and isotopic techniques in the measurement and assessment of non-radioactive pollution in contrasting marine environments.
— Improved quality and reliability of radionuclide and contaminant data.

Performance Indicators
— Number and performance of Member States laboratories and organizations utilizing methodologies and advice provided by the Agency and applying nuclear and tracer methods to implement their marine environmental radioactivity monitoring and assessment programmes.
— Number of inter-agency funded projects on marine pollution delivered through an integrated approach by MEL Monaco.
— Number and performance of Member States laboratories taking part in intercomparison exercises and requesting reference materials of marine origin. Number of Member States using reference methods published by MEL Monaco.

Programmatic changes and trends: This is an evolution of the 2004–2005 Subprogramme H.1, maintaining and diversifying its assessment and quality management components and expanding the radiotracer and isotopic investigations of marine pollution. This subprogramme will strategically incorporate the former H.3 projects covering inter-agency-funded marine pollution related activities within the value added context of the marine nuclear and isotopic projects. MEL Monaco will thus become able to comprehensively assess sources, fates and impacts for virtually any marine contaminant in the ocean and to transfer the respective methodologies and provide enhanced AQCS support for radionuclides, trace metals, organic contaminants and marine toxins to Member State laboratories. New Project H.1.01 "Measurement and Assessment of Natural and Anthropogenic Radionuclides in the Marine Environment" expands the previous H.1.01 to include measurement and assessment of naturally occurring radioactive materials (NORMs), additional key data on tracers and contaminants in the global database, scenario modelling and assessment of doses to marine biota. New Project H.1.02 "Diagnosing Contaminant Sources and Fates Using Nuclear and Isotopic Techniques" will feature novel application of nuclear and isotopic techniques to inter-agency funded studies of metals and organic contaminants in the marine environment (old H.3.02 and parts of H.3.03 and H.3.04). New Project H.1.03 "Quality Management for Monitoring Marine Contaminants and Toxins" merges the AQCS and Reference Materials (RMs) activities previously delivered for radionuclides (old H.1.04) with the inter-agency funded provision of reference methods and RMs for trace metal and organic contaminants (old H.3.01) and with the new RMs for quantifying PSP toxins in HABs impacted seafood. New Project H.1.04 "Novel Methods for Measuring Low Level Radionuclide Concentrations in Marine Samples" strengthens the previous H.1.05 through methodological developments to improve the reliability of low level

measurements and through the enhanced transfer of these methodologies to Member State laboratories. Previous H.1.02 on applications of radiotracers to study coastal processes is now transferred to new Subprogramme H.2 (new H.2.01). Development of methods for low level radionuclide concentrations in the environment in response to emergencies (under old H.1.05), and the study of marine anti-foulants in coastal environments (under old H.3.03) will be phased out.

Resource changes and trends: The proposed regular budget resources for Subprogramme H.1 amount to €1 398 100 in 2006 and €1 408 200 in 2007. This represents an increase of €41 100, or 3.0%, in 2006 compared with 2005 and a further increase of €10 100, or 0.7%, in 2007 compared with 2006. The increase for the two years is related to the fact that four projects previously in Subprogramme H.3 and receiving mixed regular and inter-agency funding have been completely or partially integrated into new Subprogramme H.1, being now part of the new projects on isotopic investigations of marine pollution and on AQCS for radionuclides, contaminants and toxins.

Financial resources (2005 prices)

H.1	2005	2006	2007
Reg. budg.	1 357 000	1 398 100	1 408 200

Projects

Recurrent Project H.1.01: Measurement and assessment of natural and anthropogenic radionuclides in the marine environment

Main outputs: The project will result in new data on radionuclide distributions, time trends and impact in the marine environment, made available to Member States through an Internet access database. The data will provide Member States with a better understanding of the radiological situation in their marine environment, adequate monitoring and assessment strategies corresponding to a range of contamination scenarios and an enhanced capacity to recognize the occurrence of any significant changes. Reports and peer reviewed scientific papers will be published on the assessment of natural and anthropogenic radionuclides and their applications as tracers in the marine environment.

Ranking: 1

Project H.1.02: Diagnosing contaminant sources and fates using nuclear and isotopic techniques

Main outputs: Regional assessments of the state of the marine environment based on marine contaminant screening programmes will be made and published. Analyses of pollutants in marine biota, especially seafood, will be conducted and reported. Reports and scientific publications relating to such marine pollution assessments will be submitted to the international literature. Training courses in sampling techniques will be undertaken.

Duration: 2006–2011

Ranking: 1

Recurrent Project H.1.03: Quality management for monitoring marine contaminants and toxins

Main outputs: This project will result in: marine reference materials; global and regional interlaboratory studies, providing an important mechanism for national and regional laboratory networks to harmonize data outputs; reports and publications on the results of the interlaboratory studies; assistance to capacity building programmes, encompassing recommendations for the selection of instruments and the provision of training courses in the analysis of radioactive and non-radioactive contaminants in marine matrices.

Ranking: 1

Project H.1.04: Novel methods for measuring low level radionuclide concentrations in marine samples

Main outputs: The project will result in the development of methods for low level analyses of radionuclides including the development of guidelines for sampling, sample pre-treatment, radiochemical separation, spectrometric analyses and interpretation of measurement results. The CRP on benchmarking calibration of low level gamma spectrometric measurements of environmental samples will result in validated calibration methods, improved traceability of results and comprehensive quantification of uncertainties in low level gamma ray spectrometry, which is one of the most extensively used techniques in environmental radioactivity monitoring. These technologies will further be transferred to Member States by individual and group training in order to improve their capacity to reliably analyse low levels of radionuclides in the marine environment.

Duration: 2006–2009

Ranking: 3

Subprogramme H.2. Radioecological and Isotopic Solutions for Coastal Marine Problems (RISCMAR)

Rationale: Problems of erosion and sedimentation, fresh water losses, desalination and contaminant ecotoxicity are increasingly affecting the ecology and capacity for sustainable development in coastal marine environments (UN GESAMP Report 2001). Nuclear and isotopic techniques provide unique and cost effective tools to quantify coastal transport processes and to track the bioaccumulation, toxicity and fate of the huge surge in diversity and quantities

of synthetic contaminants entering marine ecosystems from land based sources.

Rivers and groundwaters carry unique natural radiochemical and stable isotopic fingerprints (e.g. Rn, U, Th, C-13, N-15) which enable these inputs to be quantitatively distinguished and followed in time within the mixing zones of estuaries, coastal and shelf waters. Sediment sources, transport, mobility, accretion and deposition can also be assessed and dated from their ambient radionuclide and isotopic signatures, or tracked by novel adsorbed and neutron activatable tracers in natural sediments.

The requirement for increased knowledge about the ecological effects and fate of marine contaminants is also a critical issue with regard to human health and environmental protection. However, monitoring of contaminant levels and their geographical distribution alone is not sufficient to evaluate ecological impacts on biota, seafood products and humans.

Robust laboratory and field based radioecological and radiotracer studies are invaluable in making reliable predictions of the behaviour, uptake and transfer of radionuclides, in order to make credible marine radiological, toxicological and food chain risk assessments of local nuclear releases. Moreover, numerous land based industrial, mining, domestic and agricultural activities result in substantial input of other potentially toxic compounds, including metals, nutrients and organic pollutants, into coastal marine waters. These contaminants are not only bioaccumulated by marine organisms and transferred along the food chain, but they can also cause detriment to the biodiversity and biomass of marine ecosystems. For example, increased incidence of Harmful Algal Blooms (HABs) of saxitoxin-containing species which bioaccumulate in shellfish and affect humans, are triggered by excess nutrients and organic waste products from intensive agriculture and aquaculture.

Research on specific marine processes is required to enhance capabilities of Member States in the effective management and protection of their coastal zones. This subprogramme develops and uses nuclear and isotopic techniques to obtain critical information and provides advice to Member States on the following: coastal hydrodynamics, processes involved in the bioaccumulation and transfer of radionuclides, metal and organic contaminants and HAB biotoxins, and assessment of candidate ICRP Marine Reference Organisms.

Objective: To enhance capabilities of Member States to understand key marine physical processes governing the transport and fate of contaminants and other elements in coastal environments, and to help Member States to develop and apply laboratory and field based experimental radiotracer techniques for assessing the behaviour of chemical contaminants in biota.

Outcomes
— New knowledge on hydrodynamics and sedimentology of coastal marine environments, based on the application of nuclear and isotopic techniques. Identification of applications of these nuclear based technologies for contaminant assessment in the coastal environments of Member States.
— Enhance capability of Member States to apply nuclear techniques for assessing impacts of natural and artificial radionuclides, and other contaminants including HABS, in the coastal environment and to obtain information on bioaccumulation of contaminants required for improving health and environmental risk assessment models.
— Increased knowledge of contaminant pathways and fate of contaminants in marine organisms; enhanced knowledge of the mechanisms of human exposure to chemical contaminants and HAB toxins through seafood consumption.
Performance Indicators
— Number of case studies in Member States using nuclear applications to study the transfer and behaviour of natural and artificial radionuclides and other contaminants in environmental media of their coastal zones.
— Number of Member States using radiotracer techniques to assess and interpret impacts of land-based anthropogenic activities and of varying environmental factors on contaminant transfer and fate in marine coastal zones.
— Number of scientific communications presented at internationals conferences and of newly published scientific papers on experimentally derived data on toxic metals, organic compounds and HAB toxins in marine organisms and seafood, and on radioecological data in coastal zones.

Programmatic changes and trends: This is an evolution of the former Subprogramme H.2 (2004–2005), including some new initiatives and the phasing out of some work topics. New Project H.2.01 “Nuclear and Isotopic Studies of Marine Coastal Zone Dynamics” is the continuation of previous H.1.01 on submarine groundwater discharges, expanded to include isotopic hydrodynamics of marine sediments. New Project H.2.02 “Bioaccumulation and Transfer of Radionuclides in Coastal Environments” is the combination of previous Project H.2.01 and part of the activities in previous H.2.04 and will concentrate on the bioaccumulation and transfer of radionuclides in the coastal environment. Studies on candidate Marine Reference Organisms as global radioecological bio-

monitors will also be started. New Project H.2.03 "Radiotracing HABs Toxins and Contaminants in Seafood" is largely a new initiative on experimental radiotracer work to assess bio-availability, transfer pathways and behaviour of HAB toxins and of organo-metals already started in the previous cycle. New Project H.2.04 "Radiotracer Investigations of Marine Ecotoxicological Impacts" extends activities carried out under H.2.03 and will focus on marine ecotoxicity of land-based contaminants (mining, sewage and detergents) on coastal bio-indicator organisms. Studies of natural radioactivity inputs from coastal geothermal sources carried out during the previous cycle under Project H.2.04 will be phased out.

Resource changes and trends: The proposed regular budget resources for Subprogramme H.2 amount to €1 055 400 in 2006, reflecting a net decrease of €150 500, or 12.5%, compared with 2005, with an increase of €16 500, or 1.6%, in 2007 compared with 2006. The net budgetary reduction is due to two factors: an appreciable reduction due to the transfer of some major activities to Subprogramme H.3 in 2006, that is ameliorated by additional resources being allocated for the HAB activities for 2006–2007.

Financial resources (2005 prices)

H.2	2005	2006	2007
Reg. budg.	1 205 900	1 055 400	1 071 900

Projects

Project H.2.01: Nuclear and isotopic studies of marine coastal zone dynamics

Main outputs: This project will result in the acquisition of applicable data for understanding seawater–groundwater interactions in coastal zones, transport of contaminants from land based sources and sediment dynamics by using radioactive and stable isotopes tracers, novel adsorbed and neutron activatable tracers and the development of new methods for in situ monitoring of contaminants and their transfer to Member States through reports and scientific publications. Support will be given for the provision of in-service training in using nuclear and isotopic techniques for assessing impacts of radioactive and non-radioactive contaminants in the coastal environment and for improving environmental risk assessment models.

Duration: 2006–2009

Ranking: 2

Recurrent Project H.2.02: Bioaccumulation and transfer of radionuclides in coastal environments

Main outputs: This project will result in the acquisition of data on of transfer, fluxes, behaviour and fate of natural and artificial radionuclides and analogue elements in coastal food chains and ecosystems, and transfer to Member States through reports and scientific publications. Data relevant to the estimation of radiation exposures of candidate marine reference organisms will be provided. Training in measuring natural and artificial radionuclides to assess environmental contamination will be provided.

Ranking: 2

Project H.2.03: Radiotracing HAB toxins and contaminants in seafood

Main outputs: Results of experimental studies on the transfer and fate of labelled HAB toxins in contrasting ecosystems will be provided. Training in the use of radiotracers to establish transfer pathways and quantify transfer rates of chemical contaminants and HAB toxins will be provided.

Duration: 2006–2011

Ranking: 1

Recurrent Project H.2.04: Radiotracer investigations of marine ecotoxicological impacts

Main outputs: This project will result in: acquisition of data on contamination pathways, bioconcentration factors, transfer rates and possible detoxification/metabolization of inorganic and organic contaminants originating from land based mining and domestic activities, and their transfer to Member States through reports and scientific publications. Training in the use of radiotracers to assess contamination pathways, fluxes and fate of marine inorganic and organic contaminants will be provided.

Ranking: 1

Subprogramme H.3. Ocean Climate Coupling and Carbon Cycling (OC4)

Rationale: The Intergovernmental Panel on Climate Change (2001) has assembled compelling scientific evidence that links the global warming of 0.6°C recorded over the last 100 years to the build-up of atmospheric CO_2 originating from combustion of fossil fuels. Consequences of this 'greenhouse' warming include: (1) changes in the frequency of the Monsoon, El Niño Pacific and North Atlantic Oscillation, weather regimes which will alter regional climate, rainfall, fisheries and crop yields; and (2) sea level rise of 1–2 cm/decade which threatens floods in coral islands and low lying deltas and widespread erosion in coastal regions.

The ocean exerts control on the earth's climate and as a major sink for atmospheric CO_2; it moderates the greenhouse trend to higher temperatures. Marine photosynthesis by phytoplankton in the surface waters converts CO_2 into organic material which then

fuels marine food chains and ultimately this organic material sinks to be deposited in marine sediments. Sediments therefore record past changes in the earth's climate. Ocean nutrients, especially nitrate and phosphate, ultimately regulate the biological removal of carbon from the upper ocean and the carbon flux to the seafloor. In coastal regions, rivers can discharge high concentrations of nutrients from soils, domestic waste and especially intensive use of agricultural fertilizers. High nutrient concentrations stimulate excess phytoplankton blooms, leading to 'eutrophication', which is characterized by oxygen depletion and fish kills in coastal regimes. Nutrient eutrophication events are increasingly frequent and widespread and have been identified by UN GESAMP as a major concern to coastal Member States.

Over the last 20 years, isotopes have had a strategically pivotal role in climate and ocean research. For example, C-14 and C-13 signatures recorded in marine microfossils have been used to date and reconstruct past temperature, circulation, glacial/interglacial events. The nuclear C-14 pulse in CO_2 helps identify present day carbon sinks. Naturally occurring isotopes (U/Th, Pb-210) in seawater enable quantification of coastal erosion and deep ocean sedimentation. Marine biologists have used C-14 tracers to measure photosynthetic carbon uptake rates by plankton, and N-15 and P-32 to assess nutrient cycling and its regulation of carbon uptake. These isotopic techniques have originated in specialized oceanographic laboratories. Many have been tested by MEL scientists in Monaco, and are in high demand by Member States to investigate regional effects of climate change.

Objectives:

— To enable Member States to apply nuclear and isotopic techniques to investigate coastal and oceanographic processes of carbon and nutrient cycling of relevance to ocean climate change.

— To improve the understanding of nutrients dynamics and blooms that increasingly impact coastal and oceanic waters.

Outcomes
— Improved isotopic capability and understanding by Member States of nutrient impacts, fates and algal blooms in contrasting marine environments.
— Enhanced use of isotopic tools to improve the understanding of the biogeochemical cycling of carbon and organic material in the marine environment and its effects on climate.
Performance Indicators
— Number of Member States using isotopic techniques to assess nutrient impacts, fates and blooms in their marine environment.
Performance Indicators (cont'd)
— Number of international peer reviewed publications and Member State laboratories using isotopic techniques to study carbon cycling and to reconstruct past climate records.

Programmatic changes and trends: This is a new Subprogramme H.3 which (1) regroups the expertise from three former Subprogrammes H.1, H.2, H.3 using nuclear and isotopic techniques to study the carbon cycle and climate in water, sediments and corals, and (2) initiates a new project using stable isotopes to investigate nutrient cycling, impacts and blooms in the coastal environments of Member States. The former Subprogramme H.3 focusing on non-nuclear pollution has been phased out and its inter-agency funded parts were subsumed within the new Subprogramme H.1. Former Projects H.3.01 and H.3.02 and part of former H.3.04 are now integrated into new Subprogramme H.1. Former Project H.3.03 was phased out. Project H.3.01 "Isotopic Studies of Nutrient Dynamics and Algal Blooms" is a new initiative. Project H.3.02 "Nuclear and Isotopic Applications to Quantify Ocean Carbon Cycling" derives from relocation of former Project H2.02 and part of former Project H.3.04. Project H.3.03 "Marine Isotopic Records and Models to Assess Climate Change" results from relocation of former Project H.1.03 with focus on C-14 applications and climate modelling.

Resource changes and trends: The proposed resources for this subprogramme amount to €918 000 in 2006, reflecting an increase in the budget of €274 100, or 42.6%, compared with 2005, and a further increase of €8 400, or 0.9%, in 2007 compared with 2006. This is a new subprogramme that merges the carbon and climate work formerly done under other subprogrammes, together with the commensurate changes in staff resources and financial allocations. Also, the Project H.3.01 is a new initiative requiring significant capital investment.

Financial resources (2005 prices)

H.3	2005	2006	2007
Reg. budg.	643 900	918 000	926 400

Projects

Project H.3.01: Isotopic studies of nutrient dynamics and algal blooms

Main outputs: The project will result in an improved methodology for studying biological productivity in oceanic waters, and water quality with respect to nutrients and eutrophication in the coastal marine environments of Member States. Nutrient isotope studies will provide a unique tool for tracking nutrient dynamics in sea water. Following technique development and validation, technology transfer to

Member States will be undertaken. Scientific reports and publications will be prepared dealing with both technique development and applications in nutrient dynamics.

Duration: 2006–2011

Ranking: 2

Project H.3.02: Nuclear and isotopic applications to quantify ocean carbon cycling

*Main outputs***:** The project will result in an improved isotope methodology for studying sources of organic materials (C-13 biomarkers) and carbon fluxes (U/Th profiles) in oceanic waters and the coastal marine environments of Member States. Following technique development and validation, technology transfer to Member States will be undertaken. This will include provision of in-service training in the application of natural radionuclides techniques to establish transfer pathways of carbon in the marine environment. Scientific reports and publications will be prepared dealing with both technique development and applications in carbon cycling.

Duration: 2006–2009

Ranking: 2

Project H.3.03: Marine isotopic records and models to assess climate change

Main outputs: The project will result in the provision of a package of isotopic tools for environmental change investigations based on model case studies carried out during the project. Through the implementation of the CRP on Nuclear and Isotopic Studies of the El Niño Phenomenon in the Ocean, sea-going expeditions and analysis of marine samples, the sea temperature records over the past few hundred years will be derived and information on past climate changes will be obtained. An Oceanic Global Circulation Model for computer modelling of the distribution of isotopes in the oceans, atmosphere–ocean coupling and climate change studies, developed in collaboration with ICTP Trieste, will be available in 2007 to provide Member States with advanced knowledge of ocean–climate coupling. Training on climate change studies in the marine environment, organized together with ICTP Trieste, will contribute to wider applications of nuclear and isotopic methods in climate research.

Duration: 2004–2009

Ranking: 2

Subprogramme H.4. Supporting Quality in the Analysis of Terrestrial Environmental Samples

Rationale: Reliable, comparable and 'fit for purpose' results are an essential requirement for any decision based on analytical measurements. In addition they form the basis for international trade as well as for assessments and actions related to mitigation of incidents and sustainable development. When related to environmental assessment, management and development two important additional components need to be considered, namely sampling and modelling. A large number of environmental parameters need to be taken into account, in addition to available analytical methods for determination of the analytes of interest, which requires that laboratories demonstrate the quality of their measurement capacities and results. This is especially important for 'global assessments' when decisions are made on the basis of results produced by different laboratories. A harmonized approach in statistical evaluation, reporting, quantification of measurement uncertainty and metrological traceability is required internally for the different laboratory activities of the Agency as well as externally for laboratory networks.

A well established and operational laboratory network such as the ALMERA network (Analytical Laboratories for the Measurements of Environmental Radioactivity) can contribute to meeting these requirements. The following are among the most important tools for supporting and demonstrating quality in measurement results: i) an established quality system, ii) the regular use of reference materials and iii) frequent participation in proficiency tests and laboratory intercomparisons.

Objectives: To have high performance quality systems operating at the Agency's Laboratories and in Member State laboratories (especially members of ALMERA network) according to international standards, e.g. ISO 17025:1999 or ISO 9000:2000 with certified reference materials of well defined metrological quality according to ISO Guides 34 and 35.

Outcome
— Improved and formally demonstrated quality of laboratory activities, including sampling, measurement results and other laboratory products allowing mutual acceptance of measurement results.
Performance Indicators
— Number of Agency's network laboratories with established quality system (demonstrated quality at defined level).

Performance Indicators (cont'd)	
—	Number of reference material units distributed.
—	Number of laboratories participating in proficiency tests with a positive evaluation.
—	Number of laboratories able to respond in emergency situations as well as for assessments and measurements on a global scale.

Programmatic changes and trends: Subprogramme H.4 results from a merging of three projects, two of which are a continuation of already established projects (former AQCS of Subprogramme I.1.04 and ALMERA of H.4.01) with the addition of the laboratory quality system component. This merger follows international standardization related to analytical laboratories as well as reference materials producers and proficiency testing organizers.

Resource changes and trends: The proposed resources for Subprogramme H.4 amount to €917 300 in 2006, reflecting an increase in the budget of €30 500, or 3.4%, compared with 2005, with a further increase of €3 000, or 0.3%, in 2007 compared with 2006. The increase in resources is due to the inclusion of the laboratory quality management activities and metrology.

Financial resources (2005 prices)

H.4	2005	2006	2007
Reg. budg.	886 800	917 300	920 300

Projects

Project H.4.01: Laboratory quality management activities and metrology

Main outputs: This project will result in: operational quality system according to ISO 17025:1999 standard for selected measurement techniques (procedures) in the Agency's Laboratories; operational quality system in the selected laboratory areas for reference materials production according to ISO Guides 34 and 43; trained personnel; demonstrated analytical capabilities of Agency's Laboratories; publications and proceedings; inputs into the planning and implementation of technical cooperation projects; and common activities and products based on cooperation with other international organizations in respect to quality and metrology.

Duration: 2006–2011

Ranking: 2

Recurrent Project H.4.02: Reference materials

Main outputs: This project will result in: provision of reference materials to Member States; new reference materials; proficiency tests and advice to Member State laboratories regarding their analytical performance; IAEA reference materials catalogue; database of Agency recommended analytical procedures for analysis of environmental samples; and trained personnel.

Ranking: 1

Recurrent Project H.4.03: Agency Network of Laboratories for Measuring Radionuclides in the environment (ALMERA)

Main outputs: This project will result in: operational Agency network of laboratories for fast response in measuring radionuclides in environmental samples; available standardized methods for assessing radionuclide concentrations in environmental samples; reliable and consistent information on environmental radionuclide concentrations; and advice to international or national governing bodies in respect to assessment of environmental radioactivity.

Ranking: 3

Subprogramme H.5. Assessment in Support of Sustainable Management of the Terrestrial Environment

Rationale: Industrial and mining activities, including energy production by fossil fuels and nuclear power plants, often result in release of radionuclides and other pollutants into the environment. This can lead to exposure of and impact on man and biota, with consequences for health and sustainable management of the environment. The public and the media have also expressed concern about the environmental impact of nuclear material (depleted uranium) used in conventional ammunition, potential releases by terrorist acts (dirty bombs), and elevated levels of natural radioactivity in general. The fate and impact of contamination therefore need to be studied to provide effective preventive, diagnostic and remediation measures for different terrestrial ecosystems. Thus proper management of the terrestrial environment needs to include (in addition to monitoring and analytical capacities) an assessment of the contamination, i.e. the identification of the relevant pathways and driving parameters and, based on those, the development of site-specific prediction models and environmental decision support tools. These can be used for local and regional assessments and remediation strategies if needed, and need to be cost effective and socially acceptable.

Member States need information on the present level of radionuclides and other potential pollutants in the terrestrial environment in order to evaluate trends, to study transfer processes and environmental changes, and to predict future conditions. This requires the quantification of natural and anthropogenic sources,

modelling of the dispersion of contaminants in air, soils and water, and studies of their impact. Nuclear and isotopic techniques provide tools to investigate release processes and contamination on a quantitative basis and to address the problem of environmental management. Demand driven programmes for assistance to Member States for quality management, for capacity building and the provision of training, and for the design and implementation of environmental monitoring programmes and remediation strategies will further improve the understanding of environmental processes which will allow better management and protection of the environment. This assistance by the Agency is solicited by Member States as well as by other international organizations. In addition, the Agency serves as a clearinghouse of information and provides advice to regional and international bodies such as WHO, WMO, UNEP, UNDP, IUR and the affected Member States in Asia, Africa, South America and East Europe, as well as the Arctic and Antarctic areas, on radioactive contamination in the terrestrial environment.

Objectives: To enhance the capacities of Member States to assess past, current and future levels of contamination with radionuclides and other pollutants in the terrestrial environment; to effectively remediate historic and acute contamination or releases in the terrestrial environment; and to manage the terrestrial environment for sustainable development and environmental protection.

Outcome
— Improved management of the terrestrial environment including feasible and cost effective remediation strategies for contaminated areas based on site-specific information.
Performance Indicators
— Number of institutions using IAEA-recommended models for evaluation of radionuclide transfer.
— Number of remediation strategies applied in Member States.
— Number of institutions adopting recommended techniques for monitoring, impact assessment and environmental management using radioecological approaches, demonstrated through co-authored publications with Member State institutions.

Performance Indicators (cont'd)
— Number of institutions utilizing radiotracers and nuclear techniques in Member States for monitoring, impact assessment and environmental management.

Programmatic changes and trends: The original five projects of the subprogramme will be merged to three projects to focus on terrestrial radioecology and its application in assessment and remediation work. The metrological part and laboratory network, even though an essential pre-requisite for the conduct of Subprogramme H.5, are grouped in a separate Subprogramme H.4.

Resource changes and trends: The proposed resources for Subprogramme H.5 amount to €707 200 in both 2006 and 2007, which represents an increase of €292 800, or 70.7%, compared with 2005. The increase is due to the addition of important components. These components which refer mainly to up dating of parameter values for the prediction of radionuclide transfer and the adaptation of existing radioecological transfer models to non-radioactive pollutants, e.g. heavy metals.

These will be reflected in increased and very time consuming field activities (sampling, field measurements, sample treatment, etc.) and will consequently require also a high increase in laboratory measurement support.

Financial resources (2005 prices)

H.5	2005	2006	2007
Reg. budg.	414 400	707 200	707 200

Projects

Recurrent Project H.5.01: Terrestrial radioecology

Main outputs: This project will result in: data for radionuclides, transfer parameters, trained personnel, reports, publications and conference proceedings.

Ranking: 1

Recurrent Project H.5.02: Ecotoxicology

Main outputs: This project will result in: data, trained personnel, implementation of technical cooperation projects, harmonized approaches and reports.

Ranking: 3

Recurrent Project H.5.03: Remediation strategies

Main outputs: This project will result in: data, guidelines, trained personnel, reports and publications.

Ranking: 2

Programme I. RADIOISOTOPE PRODUCTION AND RADIATION TECHNOLOGY

Rationale: Radioisotope products and radiation technology continue to be extensively employed in many spheres of science and technology all over the world. Most of these applications remain among the best available and economically attractive options for sustainable development and contribute significantly towards improving the quality of life. Even as many countries increasingly utilize the well established technologies, additional fields of applications as well as improved techniques continue to evolve. There is hence a need to support new development efforts and catalyse those which are promising for large scale deployment. This programme of Radioisotope Production and Radiation Technology would respond to Member State requests for supporting development as well as adaptation of appropriate technology for radioisotope products, in particular radiopharmaceuticals, radioanalytical services, industrial and environmental applications. It deals with the radioisotope products and radiation technology as well as supporting development and utilization of industrial applications. In line with this, the title of the programme has been changed from 'Physical and Chemical Applications' to 'Radioisotope Production and Radiation Technology', so as to reflect better the nature of functions handled.

Radiation processing, especially using electron beam treatment, is a promising tool for effective health care measures. Support to enhance safety in disposing industrial effluents/emissions and biological pollutants as well as facile synthesis/modifications of polymeric materials for biomedical applications can be of value to Member States. Radionuclide therapy (RNT) is an emerging area of considerable interest for many Member States to augment the well established role of diagnostic nuclear medicine and will be pursued. Development efforts for both new radionuclides and carrier molecules for RNT are essential. There is a need for technology support to extend the use of radiation sources and nuclear and radioanalytical techniques for specific applications, such as in forensics, archaeology, dynamic imaging, detection of landmines and security systems for border control.

The emphasis of the Agency's work is on strengthening national capabilities and assisting national institutions to achieve self-sustainability in as many areas as possible. The main aims are to support the development of appropriate new products/techniques and transfer of know-how to developing Member States.

***Objective*:** To contribute to improved health care, better industrial performance as well as effective quality control processes and a cleaner environment, by technology support to strengthen national capability in Member States, for producing radioisotope products and applying/adapting radiation technologies for socio-economic benefits.

Outcome
— Enhanced Member State capability in the application of radioisotope products and radiation technology as tools for sustainable development.
Performance Indicator
— Number of Member State laboratories benefiting from the methodologies developed/ improved for various techniques and applications.

Specific criteria for prioritization:

— First priority is given to those projects which contribute to new and emerging areas of radioisotopes and radiation technology applications, where these techniques have advantage over conventional methods, towards meeting the needs and interests of Member States.

— Second priority is given to projects which support or enhance the Agency's role in promoting radioisotopes and radiation technology and result in services, transfer of know-how and demand for new technical cooperation projects from developing Member States.

— Third priority is given to activities in selected areas, not dominated by industry, and is purely for transfer of knowledge and increasing academic capabilities and would be of benefit to Member States only in the longer term.

Subprogramme I.1. Technology Support to Radioisotopes, Radiopharmaceuticals and Radioanalytical Services

Rationale: Radioisotope products are major tools for delivering the benefits of nuclear applications in diverse fields of health care, industry, food and agriculture, biotechnology, etc. Use of radioisotopes in the form of radiopharmaceuticals and sealed sources has been well established in medicine. This sector is characterized by continuing evolution of techniques and new procedures requiring development and production of new radioisotopes and radiopharmaceuticals. Globally, the number of

medical procedures involving the use of radioisotopes is growing with increasing emphasis towards radionuclide therapy, using radiopharmaceuticals labelled with particle (beta, auger electron, alpha, etc.) emitting radioisotopes for treatment of cancer. Nuclear and radioanalytical techniques contribute in many fields, such as geological prospecting, environmental survey, biomedical investigations, forensics and archaeology.

Over the years the Agency's R&D and technical cooperation activities have significantly enhanced the capabilities of many developing Member States in the field of radioisotope production and nuclear analytical techniques. However, with growing economic development there is an increasing demand from other developing Member States for such services. Because of the rapid progress of technologies, the majority of Member States still lack trained and qualified personnel, appropriate equipment and radiopharmaceuticals production technology and they need support to develop these locally to effectively improve their health care systems and sustain their economical development.

Strong national capabilities are necessary to sustain and expand the technology support to beneficial applications of radioisotopes, radiopharmaceuticals and accelerator based radiation sources in Member States in health care, industry and radioanalytical services for field applications including surveillance for hazardous/prescribed materials. Member States need continued assistance in the establishment of an efficient quality system in radioisotope production and the provision of nuclear and radioanalytical services. Improvement in processing methods, developing new products and enhanced quality assurance is a worldwide effort, which is well facilitated by Agency coordination. Developing Member States are increasingly seeking Agency assistance in harnessing the benefits of such technology.

Research activities under this subprogramme are based on recommendations and conclusions of different research coordination, consultant, technical and international meetings, as well as consultation with SAGNA members on the overall objectives of the programme.

CRP activities are either of the applied research type with the aim to enhance the R&D capability of Member States using indigenous resources, or the adaptive research type for progress towards technology transfer to developing Member States.

Objective: To enable Member States to benefit from radioisotope products and radioanalytical applications by supporting development/adaptation of appropriate technology/strategy as well as strengthening national capability in Member States to establish the necessary infrastructure and qualified personnel.

Outcome
— Increased capability of Member States in the local availability and use of radioisotopes, radiopharmaceuticals and radioanalytical techniques for industrial, health care and other sectors.
Performance Indicator
— Number of Member State laboratories utilizing the methodologies developed/ improved for radioisotopes, radiopharmaceuticals and radioanalytical techniques.

Programmatic changes and trends: There will be increasing emphasis on support for the development of new radionuclides (e.g. Lu-177) and products for targeted therapy and cyclotron produced radioisotopes. The subprogramme will emphasize the importance of QA/accreditation in nuclear techniques and radioanalytical services.

The following activities are going to be completed in the 2004–2005 biennium:

— Development of sources (Pd-103, I-125 and Ir-192) for brachytherapy;

— Development and validation of speciation analysis using nuclear analytical techniques;

— Development of immunoassays for non-clinical applications;

— Comparative laboratory evaluation of therapeutic radiopharmaceuticals based on somatostatin analog peptides.

Resource changes and trends: The proposed resources for Subprogramme I.1 amount to €929 400 in 2006, reflecting a decrease in the budget of €32 200, or 3.3%, compared with 2005, with a further decrease of €79 800, or 8.6%, in 2007 compared with 2006. The decrease in 2006 results mainly from a transfer of the implementation costs with regard to the AQCS project by NAAL to Programme H. The decrease in 2007 is due to redistribution of resources to Subprogramme I.2.

Financial resources (2005 prices)

I.1	2005	2006	2007
Reg. budg.	961 600	929 400	849 600

Projects

Project I.1.01: Radioisotope production using reactors and cyclotrons

Main outputs: This project will result in: technical reports, methodologies, standard procedures for production and quality control of radioisotopes and radionuclide generators from nuclear reactors and cyclotrons, radioisotopes for targeted therapy; and better targetry for liquid and gas irradiation in cyclotrons.

Duration: 2004–2010

Ranking: 1

Project I.1.02: Quality assurance in nuclear analytical and radiochemical techniques

Main outputs: This project will result in: protocols, technical reports, guidelines for quality control and training modules.

Duration: 2004–2011

Ranking: 1

Project I.1.03: Development, production and quality assurance of radiopharmaceuticals

Main outputs: This project will result in technical documents covering methodologies for the production of radiopharmaceuticals as well as improved radiolabelling techniques using Tc-99m and guidelines for QA and good manufacturing practices.

Duration: 2003–2011

Ranking: 1

Subprogramme I.2. Radiation Technology for Industrial Applications and a Safer Environment

Rationale: Applications of radioisotopes and radiation technology in many areas of industrial processes and environmental protection are contributing significantly towards sustainable development by improving the quality of life and ensuring cleaner and safer industrial processes. Identification of landmines for humanitarian demining and detection of bulk explosive materials is a major concern of several Member States. Advanced nuclear detection techniques, including the use of special neutron sources have the potential to help locate such materials and facilitate their safe disposal. The increasing industrial activity worldwide to cater to demands of the growing population tends to place a heavy burden on the environment and radiation technology contributes in this regard towards achieving safer, cleaner and more efficient industrial processes, for example by conversion of noxious gases into useful fertilizers and removal or inactivation of pathogenic microorganisms and parasites. Studies in recent years have also demonstrated the effectiveness of ionizing radiation as such, or in combination with other methods, in the decomposition of organic pollutants in aqueous solutions. Radiation treatment provides a means to process nano-structured materials, a significant impact of which is anticipated in many industries and biomedical applications including radiotherapy, as well as to develop controlled drug delivery systems. Radioactive tracers continue to be a powerful tool for developing and improving industrial process engineering and for natural resources exploration and exploitation. Radiography, digital radioscopy and tomography are advancing non-destructive examination of metallic and concrete structures. A large number of Member States with programmes in these areas will benefit from Agency support and coordination.

The Agency, through its technical cooperation and research activities, has significantly enhanced the capabilities of many developing Member States in the field of radiation technology. More than 40 pilot and industrial scale Co-60 gamma irradiators, as well as several electron accelerators which are being widely used for sterilization, food irradiation, polymer/rubber processing and effluent treatment have been established with the cooperation of the Agency. However, because of rapid progress of technologies, the majority of Member States still lack trained and qualified personnel and facilities, and they need support to develop and adopt radiation technology to effectively alleviate their industrial and environmental problems and cost effectively integrate radiation technology into their overall sustainable industrial development programme.

Research and field trials have shown the need for a broader based evaluation of the application of nuclear techniques for landmine identification. New efforts using combinations of techniques will be pursued to supplement the individual techniques tested hitherto.

The emphasis of the Agency's work is towards strengthening national capabilities and assisting national institutions achieve self-sustainability in those areas of radiotracers and radiation technology with promising new developments.

Research activities under this subprogramme are based on recommendations and conclusions of different research coordination, consultant, technical and international meetings as well as consultation with SAGNA members on the overall objectives of the programme.

CRP activities are either of the applied research type with the aim to enhance research and development capability of Member States using indigenous resources, or the adaptive research type for progress towards technology transfer to developing Member States.

Objectives: To extend the benefits from radiation technology and radiation processing applications for industrial processes and tackling pollutants/biohazards by strengthening national capabilities in Member States.

Outcome
— Increased capabilities in Member States for the application of radioisotope techniques and radiation technology in processing new materials, tackling pollutants and improvement of industrial process safety and efficiency.
Performance Indicator
— Number of Member State laboratories utilizing the methodologies developed/ improved for radiation processing and radiotracers applications.

Programmatic changes and trends: In recognition of the new technological developments and the role of radiation technology in managing agricultural and industrial waste and effluents and decontamination of biological agents, the focus in this subprogramme will be placed on:

— Promoting radiation processing, with emphasis on electron beam application, towards the elimination of hazardous biological agents and chemical contaminants posing a threat to humans;

— Investigating accelerator utilization for developing radiation processed nano-structural materials for potential use in health care and industry.

The activity on radiation synthesis of stimuli-responsive membranes, hydrogels and absorbents for separation purposes will be completed.

Resource changes and trends: The proposed resources for Subprogramme I.2 amount to €919 100 in 2006, reflecting an increase in the budget of €56 700, or 6.6%, compared with 2005, and a further increase of €105 300, or 11.5%, in 2007 compared with 2006. The increases in both 2006 and 2007 reflect the strengthening of activities in the project Radiation Technology for Advanced Materials Development, Environment and Healthcare.

Financial resources (2005 prices)

I.2	2005	2006	2007
Reg. budg.	862 400	919 100	1 024 400

Projects

Project I.2.01: Radiotracer technology for industrial processes and natural resources exploration

Main outputs: The project will result in: protocols, manuals and guidebooks for radioisotope techniques and hardware/software for routine services, technical documents for emerging radioisotope applications and trained personnel for radioisotope technology implementation.

Duration: 2003-2011

Ranking: 2

Project I.2.02: Radiation technology for advanced materials development, environment and healthcare

Main outputs: This project will result in: standardized procedures for reliable services, technical documents for emerging new radiation processing techniques and trained personnel for radiation technology.

Duration: 2002–2011

Ranking: 1

Project I.2.03: Development of procedures and training material for advanced industrial radiography

Main outputs: This project will result in: protocols, technical reports and training modules.

Duration: 2006–2010

Ranking: 2

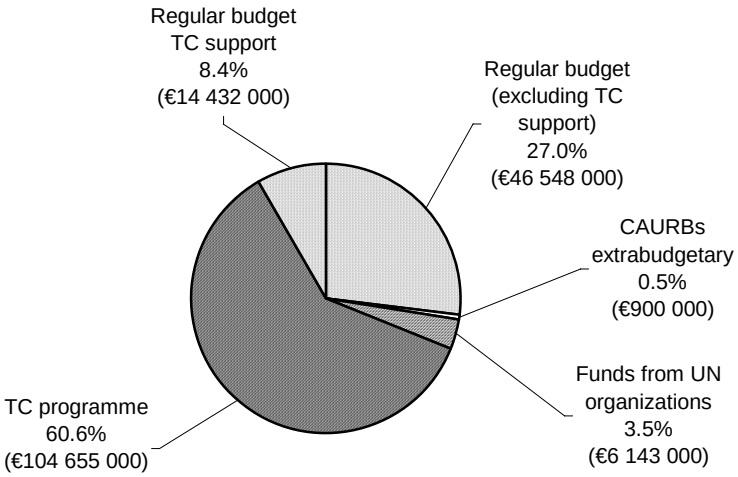
Project I.2.04: Advanced nuclear techniques for detection of landmines and bulk explosive material

Main outputs: This project will result in the evaluation of combined detection methods in humanitarian demining and in explosive bulk material detection. A technical report on neutron generators for analytical purposes will be issued.

Duration: 2006–2009

Ranking: 1

Total Resources for Nuclear Techniques for Development and Environmental Protection in 2006–2007 (including the TC programme)



	2006	2007	Total for biennium
Regular budget (excluding TC support)	23 220 000	23 328 000	46 548 000
Regular budget TC support	7 216 000	7 216 000	14 432 000
Subtotal regular budget:	30 436 000	30 544 000	60 980 000
CAURBs extrabudgetary	450 000	450 000	900 000
Funds from UN organizations	3 084 000	3 059 000	6 143 000
TC programme	52 215 000	52 440 000	104 655 000
TOTAL	86 185 000	86 493 000	172 678 000

The total resources for implementing Major Programme 2, which are illustrated (at 2006 prices) in the table and chart above, amount to €172 678 000 for the biennium. Regular budget resources constitute €60 980 000, or 35.4%, of this amount. The regular budget for 2006 (at 2005 prices) shows an increase of €308 000 compared with the adjusted budget for 2005 and a further increase of €107 000 in 2007 compared with 2006. These increases are in line with the 'Package Proposal'.

An amount of €14 432 000 of regular budget funding, or 8.4% of total resources, will be used to support technical cooperation programming worth €104 655 000 either through scientific and technical support during the formulation and implementation of projects, or as an actual contribution to the programme itself through the provision of expert services.

Extrabudgetary funding expected for the biennium accounts for a further €7 043 000, or around 4.0%, of total funds for implementation. This amount comprises €900 000 for CAURBs (0.5% of total resources), and €6 143 000 (3.5% of total resources) for activities supported by other United Nations organizations. There is a further €1 470 000 for CAURBs (listed in Table 13) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 11 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Summary of Regular Budget Resources for the Biennium

Table 12

	Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
2.	Overall management, coordination and common activities	739 600	400	0.1	740 000	(1 000)	(0.1)	739 000	0.9	746 600	745 600
	Total	739 600	400	0.1	740 000	(1 000)	(0.1)	739 000	0.9	746 600	745 600
E.1	Sustainable Intensification of Crop Production Systems	7 573 500	354 600	4.7	7 928 100	(100 000)	(1.3)	7 828 100	1.7	8 061 700	7 959 300
E.2	Sustainable Intensification of Livestock Production Systems	4 530 600	(372 300)	(8.2)	4 158 300	44 500	1.1	4 202 800	1.4	4 216 700	4 261 200
E.3	Strengthening Compliance with Food and Environmental Safety Standards through Good Agricultural Practices	2 362 300	2 700	0.1	2 365 000	55 500	2.3	2 420 500	1.1	2 390 700	2 448 100
	Total	14 466 400	(15 000)	(0.1)	14 451 400	-	-	14 451 400	1.5	14 669 100	14 668 600
	FAO Budget Amount	(2 834 000)	15 000	(0.5)	(2 819 000)	-	-	(2 819 000)	-	(2 819 000)	(2 819 000)
Programme E - Food and Agriculture		11 632 400	-	-	11 632 400	-	-	11 632 400	1.9	11 850 100	11 849 600
F.1	Nuclear Techniques in Nutrition and Disease Prevention	2 275 800	(287 700)	(12.6)	1 988 100	20 000	1.0	2 008 100	1.8	2 024 000	2 044 400
F.2	Nuclear Medicine and Diagnostic Imaging	1 566 400	141 200	9.0	1 707 600	(50 200)	(2.9)	1 657 400	2.2	1 745 000	1 692 600
F.3	Radiation Oncology and Cancer Treatment	1 173 700	376 400	32.1	1 550 100	64 000	4.1	1 614 100	1.8	1 578 100	1 644 100
F.4	Quality Assurance and Metrology in Radiation Medicine	2 775 000	(540 200)	(19.5)	2 234 800	1 200	0.1	2 236 000	1.5	2 267 600	2 268 900
Programme F - Human Health		7 790 900	(310 300)	(4.0)	7 480 600	35 000	0.5	7 515 600	1.8	7 614 700	7 650 000
G.1	Isotope Methodologies for the Protection and Management of Surface Water, Groundwater and Geothermal Resources	1 454 200	223 200	15.3	1 677 400	60 500	3.6	1 737 900	1.0	1 694 800	1 757 400
G.2	Reference Isotope Data and Analysis for Hydrological Applications	1 677 900	(117 800)	(7.0)	1 560 100	(51 000)	(3.3)	1 509 100	1.5	1 583 400	1 530 900
Programme G - Water Resources		3 132 100	105 400	3.4	3 237 500	9 500	0.3	3 247 000	1.3	3 278 200	3 288 300
H.1	Marine Environmental and Radiological Assessment (MERA)	1 357 000	41 100	3.0	1 398 100	10 100	0.7	1 408 200	1.2	1 414 400	1 424 600
H.2	Radioecological and Isotopic Solutions for Coastal Marine Problems (RISCMAR)	1 205 900	(150 500)	(12.5)	1 055 400	16 500	1.6	1 071 900	1.2	1 068 500	1 085 100
H.3	Ocean Climate Coupling and Carbon Cycling (OC4)	643 900	274 100	42.6	918 000	8 400	0.9	926 400	1.3	930 300	938 900
H.4	Supporting Quality in the Analysis of Terrestrial Environmental Samples	886 800	30 500	3.4	917 300	3 000	0.3	920 300	1.4	930 300	933 400
H.5	Assessment in Support of Sustainable Management of the Terrestrial Environment	414 400	292 800	70.7	707 200	-	-	707 200	1.4	717 200	717 200
Programme H - Assessment and Management of Marine and Terrestrial Environments		4 508 000	488 000	10.8	4 996 000	38 000	0.8	5 034 000	1.3	5 060 700	5 099 200
I.1	Technology Support to Radioisotopes, Radiopharmaceuticals and Radioanalytical Services	961 600	(32 200)	(3.3)	929 400	(79 800)	(8.6)	849 600	2.1	949 100	865 900
I.2	Radiation Technology for Industrial Applications and a Safer Environment	862 400	56 700	6.6	919 100	105 300	11.5	1 024 400	1.9	936 600	1 045 400
Programme I - Radioisotope Production and Radiation Technology		1 824 000	24 500	1.3	1 848 500	25 500	1.4	1 874 000	2.0	1 885 700	1 911 300
Major Programme 2 - Nuclear Techniques for Development and Environmental Protection		29 627 000	308 000	1.0	29 935 000	107 000	0.4	30 042 000	1.7	30 436 000	30 544 000

Major Programme 2

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Core Activities Unfunded in the Regular Budget
Table 13

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
F.3.04	Optimizing advanced techniques in radiotherapy			
	F.3.04/3	*Coordinate a CRP on improving outcomes in radiotherapy using new strategies of treatment delivery incorporating new physical and biological tools (jointly with F.2, in conjunction with F.4, NGOs) (2006-2012)*	80 000	40 000
	F.3.04/6	*Coordinate a CRP on improving outcomes in radiotherapy using novel biotechnologies: prediction of responses and tumour radiosensitisers (2006-2011)*	75 000	45 000
	Subprogramme F.3: Radiation Oncology and Cancer Treatment		155 000	85 000
F.4.02	Radiation metrology supporting the network of Secondary Standards Dosimetry Laboratories			
	F.4.02/2	*Perform comparisons and audits for SSDLs with ion chambers and/or TLDs for radiotherapy, diagnostic radiology and nuclear medicine (partially funded)*	20 000	23 000
	F.4.02/11	*Upgrade laboratory facilities to expand calibration services: purchasing and commissioning radiation equipment in new bunker (partially funded)*	170 000	170 000
	Subprogramme F.4: Quality Assurance and Metrology in Radiation Medicine		190 000	193 000
Programme F - Human Health			345 000	278 000
G.1.02	Isotope methods for the assessment of groundwater sustainability			
	G.1.02/3	*Review current status of isotope applications for understanding the impact of climate change on groundwater recharge*	40 000	40 000
G.1.03	Development of isotope methodologies for water quality assessment and management			
	G.1.03/4	*Produce a synthesis document on recent advances in the analysis of N and O isotopes in nitrate*	40 000	40 000
	Subprogramme G.1: Isotope Methodologies for the Protection and Management of Surface Water, Groundwater and Geothermal Resources		80 000	80 000
G.2.01	Development of Member State capacity for isotope analysis of hydrological samples			
	G.2.01/2	*Upgrade liquid scintillation counter and mass spectrometer in the Isotope Hydrology Laboratory*	150 000	160 000
	Subprogramme G.2: Reference Isotope Data and Analysis for Hydrological Applications		150 000	160 000
Programme G - Water Resources			230 000	240 000

Major Programme 2 - Nuclear Techniques for Development and Environmental Protection

Core Activities Unfunded in the Regular Budget
Table 13 (Contd.)

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
H.1.04	Novel methods for measuring low level radionuclide concentrations in marine samples			
	H.1.04/3	*Coordinate a CRP on benchmarking calibration for low level gamma spectrometric measurements of environmental samples (in conjunction with H.4)*	38 000	28 000
	Subprogramme H.1: Marine Environmental and Radiological Assessment (MERA)		38 000	28 000
Programme H - Assessment and Management of Marine and Terrestrial Environments			38 000	28 000
I.1.02	Quality assurance in nuclear analytical and radiochemical techniques			
	I.1.02/7	*Coordinate a CRP on large sample neutron activation analysis in low flux reactors (2007-2011)*	-	55 000
I.1.03	Development, production and quality assurance of radiopharmaceuticals			
	I.1.03/7	*Coordinate a CRP on development of radiopharmaceuticals for radiosynoviorthesis (2007-2011)*	-	57 000
	Subprogramme I.1: Technology Support to Radioisotopes, Radiopharmaceuticals and Radioanalytical Services		-	112 000
I.2.02	Radiation technology for advanced materials development, environment and healthcare			
	I.2.02/10	*Coordinate a CRP on development of new generation of marketable products based on radiation processed natural polymers (2006-2010)*	57 000	32 000
I.2.03	Development of procedures and training material for advanced industrial radiography			
	I.2.03/5	*Coordinate a CRP on development of digital radiography techniques for industrial applications (2006-2010)*	55 000	55 000
	Subprogramme I.2: Radiation Technology for Industrial Applications and a Safer Environment		112 000	87 000
Programme I - Radioisotope Production and Radiation Technology			112 000	199 000
Major Programme 2 - Nuclear Techniques for Development and Environmental Protection			725 000	745 000

Major Programme 3 – NUCLEAR SAFETY AND SECURITY

Introduction

Recognizing that nuclear safety and security are truly global and transboundary issues, the Agency has put forward the vision of a global nuclear safety regime that provides for the protection of people and the environment from effects of ionizing radiation, the minimization of the likelihood of accidents that could endanger life and property, and effective mitigation of the effects of any such events should they occur. The strategic approach for achieving the vision of establishing such a regime involves four elements and aims at ensuring that the overall safety level in Member States continues to improve and that weak links in safety are eliminated. The primary element addresses improvement of national safety infrastructures, to which the commitment of Member States may be reinforced by intergovernmental agreements. The other three elements address the global acceptance of the Agency's safety standards as the reference for excellence, an integrated approach to their application, and self-sustaining regional networks of safety related knowledge and experience. A similar vision is being developed for a global security regime that is fully integrated with that for safety in the longer term but currently recognizes the practical needs of a separate but synergistic approach.

Objectives

To enhance the capabilities of Member States to achieve and maintain a high level of safety and security worldwide as a basis for utilization and development of nuclear technology and a vigorous process of knowledge and experience exchange and creation.

Outcomes
— Greater acceptance by Member States of international conventions, codes of conduct and other instruments.
— Improved global security of nuclear materials, other radioactive materials, nuclear facilities, locations and transports.
— Establishment and acceptance of Agency safety standards as a common global reference for protecting people and the environment.
— An integrated approach for the development and application of Agency safety standards.

Outcomes (cont'd)
— Self–sustaining regional and global network of safety related knowledge and experience.

Performance Indicators
— Increase in contracting parties to international conventions and countries subscribing to codes of conduct and to other instruments.
— Evidence of completed institutional arrangements complemented by a set of Agency guidance documents. — Evidence that the international security framework is adopted and utilized by Member States.
— Degree of adoption and utilization of safety standards in Member States.
— Overall programme results demonstrate that the development and application of safety standards are implemented in an integrated manner.
— Safety networks fully established and used by participating countries in a self sustained and decentralized mode.

Recurrent Project: Overall management, coordination and common activities

Through this project support and coordination are provided for the programmes, ensuring that the Agency's standards constitute a comprehensive, coherent and authoritative suite of international accepted safety standards of excellence, supporting integrated approaches to their application, and promoting the networking of information and knowledge (including providing IT support). The support will also enhance the synergies of safety and security aspects in the programmes.

Policy support and coordination include support for the International Nuclear Safety Group (INSAG), the Commission on Safety Standards (CSS) and the Advisory Group on Nuclear Security (AdSec). Support will also be provided for the quality control and promotion of the standards and other related documents, ensuring systematic feedback from the application of the safety standards, supporting programme evaluation, promoting information exchange and supporting coordinated research projects.

Main outputs: Policy papers will be developed and coordinated. The development of programme and budget material will be coordinated. Internal coordination meetings will be held to review consistency and quality of safety standards and their

applications. Support will be provided to the meetings of CSS, INSAG and AdSec. Information material will be developed. Copies of safety standards will be distributed to designated users in Member States. In consultation with other programmes, information and knowledge management specific to the programme will be developed and maintained. A knowledge based platform will be efficiently operated to improve the exchange of lessons learned from all related activities and to ensure effective and efficient planning and delivery of the programme. The Internet and intranet sites will be maintained. Support will be provided to safety networks.

Subprogramme X.1. Incident and Emergency Preparedness and Response

Rationale: Incidents and emergencies continue to occur — often involving lost, stolen, damaged or discovered sources. Relatively minor incidents occur at nuclear facilities that may raise undue anxieties among the public, and there remains the unlikely possibility of a severe emergency that could result in transnational impacts. In recent years there has been increased concern about the possibility of incidents or emergencies resulting from the malicious use of radioactive material or attacks on nuclear facilities. Early on in the course of such events it is usually unknown whether the cause is accidental, due to negligence or is deliberate. The principal aim is to mitigate the event and its radiological consequences, but it is also important to address non-radiological issues in part through consistent and authoritative provision of information to the public. Coherent initial assessment, crisis and consequence management is needed, which can only be achieved through coordinated and effective preparedness involving all the relevant authorities and response organizations.

Adequate preparedness to respond to nuclear and radiological incidents and emergencies is not universal. Provision of the following by the Agency ought to benefit authorities, planners and responders: 1) consistent approaches for strengthening national preparedness; 2) effective international arrangements for sharing official, technical and public information and obtaining advice/assistance during an incident or emergency; and 3) sharing experience from incidents, emergencies or exercises that can help to prevent or ameliorate the consequences of similar events.

The Convention on Early Notification of a Nuclear Accident (Early Notification Convention) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Assistance Convention) place specific functions on the Agency with regard to communication and assistance during an emergency, and in assisting Member States and parties with the development, strengthening and harmonization of response arrangements. In this regard, the General Conference, in resolution GC(48)/RES/10, inter alia requested the Secretariat to continue the implementation of the International Action Plan for Strengthening the International Emergency Preparedness and Response System for Nuclear and Radiological Emergencies — GOV/2004/40 (Corrected), approved at the June 2004 meeting of the Board of Governors. There is no other organization within the UN system that can provide comprehensive practical guidance and tools to States on preparedness and response to nuclear and radiological emergencies.

Objective: To have in place effective and compatible national and international arrangements for early warning, for responding to actual and potential nuclear/radiological incidents and emergencies independently of their cause, and for feedback and continuous improvement.

Outcome
— Improved national and international arrangements for early warning and response to incidents and emergencies.
Performance Indicator
— Assessment by competent authorities and relevant international organizations of the contribution made by the Agency to improving national and international arrangements.

Programmatic changes and trends: The work on requirements for emergency preparedness and response is complete. Implementing the International Action Plan is a major new activity. In addition, there is a continuing trend to make the Agency's practical guidance and tools (including training material and services), and arrangements for international communications and assistance coherent across all types of actual and potential nuclear/radiological incidents and emergencies — independently of their cause. The General Conference, in resolution GC(48)/RES/10, requested the Secretariat to review its current mechanisms for reporting and sharing information about incidents and emergencies, with a view to streamlining them. A principal aim in the biennium will be to institutionalize, within the Secretariat, a unified and coordinated incident and emergency response system that represents one focal point for Member States and the Agency for the reporting of events, including nuclear/radiological incidents and emergencies, potential threats, events of media interest/concern, and exchanging information on lessons identified. For these reasons and also based on lessons identified from the Programme Performance Assessment in 2002–2003,

a new subprogramme outside of the other programmes in Major Programme 3 has been established. It includes some activities carried out under former Subprogramme K.8 (Preparedness for and Response to Nuclear or Radiological Emergencies) and former Project J.2.05 (Maintaining the International Nuclear Event Scale — INES — and information exchange on nuclear and radiation events — NEWS) as well as some activities related to the former J.1.03 (Event reporting and analysis for regulators), K.6.01 (Enhancing safety of radiation sources), M.1.02 (Nuclear security information), M.3.01 (Guidelines and recommendations for detection and response to malicious acts), M.3.04 (Advisory services for detection and response to malicious acts) and M.3.05 (Provision of training and technical support for detection and response). The subprogramme is coordinated with Project K.1.03 (Radiological protection in emergency intervention situations).

Resource changes and trends: The proposed resources for Subprogramme X.1 amount to €904 700 in 2006, reflecting an increase in the budget of €57 300, or 6.8% compared with 2005, and a further increase of €28 500, or 3.2% in 2007 over 2006. The increase is mainly due to the newly established Project X.1.03 on strengthening intergovernmental and interagency arrangements.

Financial resources (2005 prices)

X.1	2005	2006	2007
Reg. budg.	847 400	904 700	933 200

Projects

Project X.1.01: Enhancing national preparedness for responding to incidents and emergencies

Main outputs: This project will result in: practical and coherent tools for helping States address guidance for response by law enforcement personnel and other emergency services; and strengthened set of response guidance/tools, including the use of the INES scale for public communication.

Duration: 2004–2011

Ranking: 1

Recurrent Project X.1.02: Operating and enhancing the Secretariat's incident and emergency centre

Main outputs: This project will result in: prompt provision of information, advice and assistance in the case of a nuclear or radiological incident or emergency; up-to-date plans and arrangements; enhanced facilities, equipment, additional communication and IT systems in place with higher reliability; increased frequency of training and exercising of staff; knowledge management tools for simplifying the processing and dissemination of information; expanded networks of expertise; a common platform and associated arrangements for receiving and validating reports on actual or potential incidents and emergencies.

Ranking: 1

Recurrent Project X.1.03: Strengthening intergovernmental and interagency arrangements

Main outputs: This project will result in: updated editions of the Joint Plan; tabletop exercises of co-sponsoring international organizations; intergovernmental exercises; meetings of competent authorities identified under the Early Notification and Assistance Conventions; protocols on international communication and assistance delivery.

Ranking: 2

Major Programme 3 - Nuclear Safety and Security

Summary of Programme Structure and Resources

Table 14

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
3.	Overall management, coordination and common activities	946 600	192 000	7 000	951 800	192 000	24 000
	Total	946 600	192 000	7 000	951 800	192 000	24 000
X.1.01	Enhancing national preparedness for responding to incidents and emergencies	114 600	-	-	114 600	-	-
X.1.02	Operating and enhancing the Secretariat's incident and emergency centre	667 300	290 000	250 000	691 300	290 000	150 000
X.1.03	Strengthening intergovernmental and interagency arrangements	131 800	280 000	100 000	137 200	280 000	100 000
	Subprogramme X.1: Incident and Emergency Preparedness and Response	913 700	570 000	350 000	943 100	570 000	250 000
	Programme X - Incident and Emergency Preparedness and Response	913 700	570 000	350 000	943 100	570 000	250 000
J.1.01	Enhancing regulatory performance	593 300	98 000	-	577 900	98 000	-
J.1.02	Reporting and analysing events	316 500	-	-	295 800	-	-
J.1.03	Providing support to the convention on nuclear safety	209 600	-	-	204 400	-	-
	Subprogramme J.1: National Regulatory Infrastructure for Nuclear Installation Safety	1 119 400	98 000	-	1 078 100	98 000	-
J.2.01	Harmonizing the approaches to safety standards for nuclear installations	394 800	80 000	-	394 800	80 000	-
J.2.02	Promoting the integrated safety approach	526 800	160 000	-	539 200	160 000	-
J.2.03	Implementing a strategy for sustainable education and training in nuclear installation safety	207 800	-	-	196 600	-	-
J.2.04	Sharing information and knowledge on nuclear safety	521 900	1 790 000	-	584 500	1 790 000	-
	Subprogramme J.2: Global Infrastructure and Information and Communication Networks for Nuclear Installation Safety	1 651 300	2 030 000	-	1 715 100	2 030 000	-
J.3.01	Harmonizing the use of advanced safety analysis methods for long term operation of existing NPPs and for innovative designs	687 100	300 000	-	678 600	300 000	-
J.3.02	Assisting in the use of safety management tools	451 200	-	-	444 300	-	-
	Subprogramme J.3: Development and Use of Advanced Tools for Safety Assessment	1 138 300	300 000	-	1 122 900	300 000	-
J.4.01	Enhancing safety of innovative and evolutionary NPPs	480 500	130 000	-	469 600	130 000	-
J.4.02	Providing for the design safety for long term operation	381 300	350 000	-	422 300	350 000	-
J.4.03	Providing for the evaluation of external/internal hazards and site safety	546 900	-	-	508 300	-	-
	Subprogramme J.4: Design Safety and Site Evaluation	1 408 700	480 000	-	1 400 200	480 000	-

Major Programme 3 - Nuclear Safety and Security

Summary of Programme Structure and Resources
Table 14 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
J.5.01	Enhancing operational safety performance	1 110 100	355 000	-	1 102 500	355 000	-
J.5.02	Providing for the sharing of operational safety experience	490 600	65 000	-	490 600	65 000	-
	Subprogramme J.5: Operational Safety	1 600 700	420 000	-	1 593 100	420 000	-
J.6.01	Enhancing the safety of research reactors	642 000	280 000	-	680 200	280 000	-
J.6.02	Monitoring and safety enhancement of research reactors under agreement	238 900	-	-	241 400	-	-
J.6.03	Enhancing the safety of fuel cycle facilities	266 700	160 000	-	258 300	160 000	-
	Subprogramme J.6: Safety of Research Reactors and Fuel Cycle Facilities	1 147 600	440 000	-	1 179 900	440 000	-
Programme J - Safety of Nuclear Installations		8 066 000	3 768 000	-	8 089 300	3 768 000	-
K.1.01	Developing radiation safety standards and fostering international approaches to radiation safety	421 000	48 000	-	426 200	48 000	-
K.1.02	Appraising compliance with and maintaining review of the Agency's radiation protection rules and procedures	14 300	-	-	14 300	-	-
K.1.03	Radiological protection in emergency intervention situations	340 600	70 000	180 000	337 700	70 000	180 000
	Subprogramme K.1: Radiation Safety Standards	775 900	118 000	180 000	778 200	118 000	180 000
K.2.01	Strengthening national regulatory control and promoting integrated safety evaluations	400 700	580 000	20 000	386 500	580 000	20 000
K.2.02	Implementing a strategy for sustainable education and training in radiation and transport safety	344 300	50 000	-	344 300	50 000	-
K.2.03	Maintaining information and harmonizing technical support to Member States	387 600	120 000	30 000	387 600	120 000	30 000
	Subprogramme K.2: Radiation Safety Infrastructures	1 132 600	750 000	50 000	1 118 400	750 000	50 000
K.3.01	Developing and providing for the application of occupational radiation protection guidance, for both artificial and natural radioactive sources	395 000	-	-	388 500	-	-
K.3.02	Intercomparing occupational radiation protection monitoring measurements and standardizing radiation protection quantities and units	143 400	-	-	143 400	-	155 000
K.3.03	Applying safety standards to the Agency's own operations	304 900	-	-	304 900	-	-
	Subprogramme K.3: Occupational Radiation Protection	843 300	-	-	836 800	-	155 000

Major Programme 3 - Nuclear Safety and Security

Summary of Programme Structure and Resources
Table 14 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
K.4.01	Optimizing radiological protection of patients in diagnostic radiology	280 200	-	75 000	299 500	-	75 000
K.4.02	Optimizing radiological protection of patients undergoing interventional procedures using X rays	149 000	-	-	149 000	-	-
K.4.03	Optimizing radiological protection of patients in nuclear medicine and preventing accidental exposures in radiotherapy	103 400	-	-	103 400	-	-
	Subprogramme K.4: Radiological Protection of Patients	532 600	-	75 000	551 900	-	75 000
K.5.01	Developing guidance for the safety and security of radiation sources	466 800	125 000	-	461 600	125 000	-
K.5.02	Regaining control over unsecured radioactive sources	455 400	125 000	-	450 000	125 000	-
	Subprogramme K.5: Control of Radiation Sources	922 200	250 000	-	911 600	250 000	-
K.6.01	Reviewing and revising the international regulations for the safe transport of radioactive materials and associated guidance	447 700	80 000	-	449 800	80 000	-
K.6.02	Appraising compliance with the safety standards for the transport of radioactive materials	353 600	-	-	353 600	-	-
	Subprogramme K.6: Safety of the Transport of Radioactive Material	801 300	80 000	-	803 400	80 000	-
Programme K - Radiation and Transport Safety		5 007 900	1 198 000	305 000	5 000 300	1 198 000	460 000
L.1.01	Reviewing and approving waste safety standards	386 600	32 000	-	386 600	32 000	-
L.1.02	Servicing the Joint Convention on the safety of spent fuel management and on the safety of radioactive waste management	175 600	-	-	110 400	-	-
L.1.03	Managing radioactive waste information systems	412 900	-	-	425 400	-	-
L.1.04	Facilitating exchange of radioactive waste management information and know-how	282 000	-	-	275 900	-	-
	Subprogramme L.1: Development of Waste Safety Standards, Servicing the Joint Convention and Fostering Information and Communication Networks	1 257 100	32 000	-	1 198 300	32 000	-

Major Programme 3 - Nuclear Safety and Security

Summary of Programme Structure and Resources
Table 14 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
L.2.01	Improving the safety of predisposal of radioactive waste	256 300	-	-	294 500	-	-
L.2.02	Developing a globally harmonized approach for the safe disposal of radioactive waste	647 500	450 000	-	627 600	450 000	-
L.2.03	Transferring technologies for the predisposal of radioactive waste	652 900	-	-	653 200	-	-
L.2.04	Building confidence and transferring technologies for the disposal of radioactive waste	885 700	-	60 000	876 000	-	30 000
L.2.05	Management of disused sealed radioactive sources	397 800	-	-	396 900	-	-
	Subprogramme L.2: Disposable Waste: Management of Radioactive Waste and Disused Sealed Sources	2 840 200	450 000	60 000	2 848 200	450 000	30 000
L.3.01	Controlling the exposure of humans and non-human species from environmental radiation	294 700	-	-	317 900	-	-
L.3.02	Monitoring and maintaining an inventory of radioactive discharges to the environment	204 300	-	20 000	209 500	-	20 000
L.3.03	Achieving international agreement on modelling environmental radionuclide transfer and doses to humans and non-human species	217 100	-	20 000	222 200	-	20 000
	Subprogramme L.3: Dischargeable Waste: Public and Environmental Protection	716 100	-	40 000	749 600	-	40 000
L.4.01	Developing and implementing guidance on the safe termination of nuclear activities	298 300	100 000	60 000	308 700	100 000	60 000
L.4.02	Regulating and remediating environments with residues from naturally occurring radioactive material (NORM)	151 600	-	-	154 700	-	-
L.4.03	Developing and implementing guidance for the remediation of environments affected by radioactive residues from past activities and events	242 900	-	25 000	244 900	-	-
L.4.04	Facilitating the transfer of sustainable technologies for decommissioning of facilities	292 800	-	-	312 100	-	-
L.4.05	Promoting technologies for remediation of contaminated sites	194 400	-	12 000	179 600	-	43 000
	Subprogramme L.4: Residual Waste: Decommissioning of Installations and Remediation of Sites	1 180 000	100 000	97 000	1 200 000	100 000	103 000
Programme L - Management of Radioactive Waste		5 993 400	582 000	197 000	5 996 100	582 000	173 000

Major Programme 3 - Nuclear Safety and Security

Summary of Programme Structure and Resources
Table 14 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
M.1.01	Assessing nuclear security priorities and analysing threats	43 400	-	-	43 400	-	-
M.1.02	Harmonizing coordinated nuclear security activities with Member States	214 300	-	-	214 300	-	-
M.1.03	Providing consistency and coherence of nuclear security activities and programmes	116 700	-	-	116 700	-	-
	Subprogramme M.1: Assessing Nuclear Security Needs, Threat Analysis and Coordination	374 400	-	-	374 400	-	-
M.2.01	Developing guidelines and recommendations for enhanced nuclear security	254 600	-	-	254 600	-	-
M.2.02	Supporting implementation of the nuclear security framework to prevent malicious acts	133 300	-	-	133 300	-	-
M.2.03	Providing nuclear security services for prevention of malicious acts	359 900	-	-	359 900	-	-
	Subprogramme M.2: Preventing Malicious Activities Involving Nuclear and Radioactive Materials and their Associated Facilities	747 800	-	-	747 800	-	-
M.3.01	Developing guidelines and recommendations for detection and response to malicious acts	132 500	-	-	132 500	-	-
M.3.02	Providing nuclear security services for detection and response to malicious acts	37 300	-	-	37 300	-	-
M.3.03	Supporting implementation of the nuclear security framework for detection and response to malicious acts	52 400	-	-	52 400	-	-
	Subprogramme M.3: Detecting and Responding to Malicious Activities Involving Nuclear and Other Radioactive Materials	222 200	-	-	222 200	-	-
Programme M - Nuclear Security		1 344 400	-	-	1 344 400	-	-
Major Programme 3 - Nuclear Safety and Security		22 272 000	6 310 000	859 000	22 325 000	6 310 000	907 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme J. SAFETY OF NUCLEAR INSTALLATIONS

Rationale: The development of a global safety regime has become a reality. The power of a global nuclear community brings with it a greater ability to share information and experience, thereby improving the level of safety throughout the world. The vulnerabilities of a global nuclear community raise questions concerning technical consistency and compatibility, and challenges in dealing with cultural diversity and its implications.

In looking to this biennium, the Agency's efforts in the area of nuclear installation safety must focus on promulgating a comprehensive set of safety standards, ensuring their application in an effective manner and, all the while, doing so with a sensitivity to efficiently using the resources available to the programme. Key points of emphasis inherent to these goals include:

- maintaining safety standards current and complete, while ensuring that they reflect the optimal levels of safety for all types of nuclear installations;
- integrating risk informed considerations into the next generation of the safety standards. Inherent to this goal is to develop safety standards that are "graded" in that the guidelines promulgated take into consideration the vulnerabilities associated with the particular application;
- tailoring review services to the individual needs of Member States, using modular formats that can address the particular facts and circumstances of the national programmes;
- increasing the use of self-assessments within individual Member States as a key component of the process by which the application of safety standards are ensured;
- establishing preparatory and follow-up missions as an integral part of all safety services provided in the programme;
- recognizing that the operating parameters for current generation installations are being expanded (long term operation, licence extension, power uprates) and that these changes bring with them new safety challenges;
- using self-assessments and peer reviews (internal and external) as vehicles to identify ways to improve the efficiency and effectiveness of the Agency's programmes.

Objectives:

— To achieve and maintain appropriate levels of safety in nuclear installations during their design, construction and total life cycle through promulgating safety standards for all types of nuclear installations.

— To assess the application of these safety standards throughout the world.

Outcomes
— Safety standards maintained current and complete, as demonstrated by the promulgation of international standards that reflect the best levels of safety.
— The effective and worldwide application of safety standards assessed through safety review services and safety assessment missions.
Performance Indicators
— Standards promulgated for all types of nuclear installations, in accordance with the Safety Standards Action Plan. — Percentage of safety standards documents reviewed and updated as required.
— Number of safety review services completed. — Percentage of issues associated with safety review service recommendations adequately addressed by Member States. — Conversion of all safety review services to a modularized format.

Specific criteria for prioritization:

— First priority is given to projects establishing standards and servicing conventions.

— Second priority is given to the projects related to the application of standards.

— Third priority is given to projects dealing with the strengthening of information exchange.

Subprogramme J.1. National Regulatory Infrastructure for Nuclear Installation Safety

Rationale: A global nuclear safety regime is evolving. The Convention on Nuclear Safety provides for review meetings that are an effective mechanism for the information exchange and peer review that are essential to improved safety. The Agency will continue to service the Convention on Nuclear Safety, including preparation of a report on issues and trends in nuclear safety based on its services.

More States have developed the legal and governmental infrastructure needed to support effectively independent regulators. Member States are striving to achieve and maintain stable and effective regulatory regimes, in order to guarantee a high level of safety of all nuclear facilities and activities under their national responsibility. The regulatory bodies face new challenges and strive to improve the regulatory infrastructure to adequately control, using a graded approach, all types of nuclear installations.

There is increasing interest from Member States concerning the IRRT review methodology. The Agency promotes the use of self-assessment and the international peer reviews of such self-assessment. Improvements in regulatory performance also benefit from the use of regulatory performance indicators and the monitoring of facility safety performance indicators.

International regulators groups have formed and are exchanging information and best practices in order to improve the regulatory effectiveness and processes in their States. A networking of regulatory authorities is established to help with the exchange of information and to facilitate the coordination of the activities of the various groups of regulators. Incident reporting will continue to be part of this network. One key challenge is to achieve that the lessons learned from events are used to enhance the safety of nuclear installations and prevent the recurrence of similar events. Harmonized web-based systems are being developed which can cover all types of nuclear installations and allow for a more user friendly tool to share in a more efficient manner these lessons learned. A key challenge is to transform this system from an information exchange system to a knowledge based system.

Objective: To strengthen the independence, technical competence and effectiveness of regulatory bodies in Member States.

Outcomes
— Increased use of self-assessment, peer review of self-assessment services, regulatory performance indicators and safety performance indicators.
— Successful preparation for the fourth review meeting for the Convention on Nuclear Safety through the organization of the organizational meeting and the issuance of a report on issues and trends based on the Agency's services.
— Increased effectiveness of the regulatory exchange and use of lessons learned from operating experience feedback for nuclear power plants, research reactors and fuel cycle installations.
Performance Indicators
— Number of safety review services for the subprogramme completed. — Percentage of safety standards documents reviewed and updated as required. — Percentage of issues associated with safety review service recommendations adequately addressed by Member States.
— Satisfaction by Contracting Parties of Convention on Nuclear Safety.
— Number of reports received on lessons learned from events involving nuclear power plants, research reactors and fuel cycle facilities.

Programmatic changes and trends: The Agency will continue to provide its support for the review meetings for the Convention on Nuclear Safety, in particular through the organization of the organizational meeting for the fourth review meeting and the preparation of a report on issues and trends to focus Members States' attention in the drafting of their National Reports.

It is moreover expected that during the years 2006–2007, the Member States will carry out more self-assessment of the effectiveness of their regulatory infrastructure and request peer review of self-assessment IRRT missions. The feedback from these services will serve to share best practices among Member States and be used as a basis for the future review and, as necessary, revision on the safety standards on legal and governmental infrastructure.

Assistance missions and IRRT reviews are expected to further strengthen, in a graded approach, the effectiveness of regulating nuclear power plants, research reactors and fuel cycle installations.

Finally it is expected that the development of an harmonized and modern knowledge based platform will help improving the exchange of lessons learned from incidents involving nuclear power plants, research reactors and fuel cycle installations.

Resource changes and trends: The proposed resources for Subprogramme J.1 amount to €1 109 700 in 2006, reflecting a decrease in the budget of €73 100 or 6.2%, compared with 2005, with a further decrease of €40 000 or 3.6% in 2007 over 2006. The decrease is mainly due to the fact that in the current programme cycle there are no major meetings in the context of the Nuclear Safety Convention requiring high interpretation costs under Project J.1.03, Providing support to the Convention on Nuclear Safety.

Financial resources (2005 prices)

J.1	2005	2006	2007
Reg. budg.	1 182 800	1 109 700	1 069 700

Projects

Project J.1.01: Enhancing regulatory performance

Main outputs: This project will result in tools for regulators in the form of IRRT services, follow-ups, quality assurance systems, self-assessment of performance, risk informed regulations and good practices. Also, safety performance indicators for regulators will be available.

Duration: 2006–2007

Ranking: 1

Recurrent Project J.1.02: Reporting and analysing events

Main outputs: This project will result in: meetings, reports and publications addressed to the nuclear safety community for the purpose of information exchange related to the Incident Reporting System (IRS), thus contributing to the enhancement of the safety of nuclear installations.

Ranking: 3

Recurrent Project J.1.03: Providing support to the convention on nuclear safety

Main outputs: A report on generic issues, trends and necessary improvements in safety based on the Agency's safety services will be made available to contracting parties in 2007. The organizational meeting of the contracting parties will be prepared and supported.

Ranking: 1

Subprogramme J.2. Global Infrastructure and Information and Communication Networks for Nuclear Installation Safety

Rationale: Both the development of safety standards for nuclear installations and the provision for the application of these standards are cornerstones of the global nuclear safety regime. The Agency provides for the application of standards through safety related assistance, safety review and advisory services, promoting sustainable education and training, fostering exchange of safety information and coordinating research and development. Through an integrated safety approach it is ensured that all Agency's safety functions are mutually reinforcing. There is a need to ensure technical consistency in these safety functions. Also a support function needs to be provided for cross-cutting issues such as the management of safety and safety culture. In the performance of all these safety functions, safety information needs to be captured and the relevant explicit and implicit knowledge extracted and managed. In order to enhance safety worldwide this knowledge needs to be shared with Member States through networks and Member States should be encouraged to also share national knowledge through these networks. Specific nuclear safety profiles on Member States will be maintained by analysing all the relevant information. Assistance in promoting sustainable education and training for nuclear installation safety is a key factor in maintaining knowledge in safety. The international community promotes openness in operating experience and public communication through several services.

Objective: To maintain and enhance a global infrastructure related to nuclear installation safety and to increase transparency on safety matters.

Outcomes
— Up-to-date set of nuclear safety standards.
— A consistent set of safety review services that provide for the application of the safety standards.
— Nuclear safety information networks in place.
Performance Indicators
— Percentage of safety standards documents reviewed and updated as required.
— Coverage of safety standards by safety review services.
— Number of requests for information from the safety network.

Programmatic changes and trends: There will be an ongoing development, review and update of safety standards for nuclear installations, which will require a continued dedication of resources. Any revision will explore the possibility to make them more risk-informed. The list of safety review services will be reduced to a few, broad reaching areas. These services will basically follow harmonized processes, with self-assessment becoming one of the steps in the process. Management of safety and safety culture will be integrated in these safety services, thereby reaching more organizations involved in nuclear

safety. Information management and the sharing of knowledge will become part of the normal business processes. An issue affecting all aspects of nuclear energy is how to maintain and enhance competence of a new generation of professionals with special attention to nuclear safety.

Resource changes and trends: The proposed resources for Subprogramme J.2 amount to €1 639 600 in 2006, reflecting an increase in the budget of €211 500, or 14.8% compared with 2005, and a further increase of €61 000, or 3.7% in 2007 over 2006. The increase is mainly due to strengthening of staffing resources under Project J.2.01, Harmonizing the approaches to safety standards for nuclear installations and under Project J.2.03, Implementing a strategy for sustainable education and training in nuclear installation safety.

Financial resources (2005 prices)

J.2	2005	2006	2007
Reg. budg.	1 428 100	1 639 600	1 700 600

Projects

Recurrent Project J.2.01: Harmonizing the approaches to safety standards for nuclear installations

Main outputs: In addition to the support for the Nuclear Safety Standards Committee, this project oversees and coordinates the development of safety standards for nuclear installations, the periodic review of the present safety standards and, if needed, their revision. The production of other safety related documents that support these standards is controlled.

Ranking: 1

Project J.2.02: Promoting the integrated safety approach

Main outputs: The safety standards development process and the various mechanisms of providing for the application of the standards require multiple interactions between these activities. One of the products of this project is to ensure that safety reviews are conducted in a harmonized manner, using modular format and following common core processes. Also, the feedback from the services will be collected for the benefit of continuously improving the services as well as input for the review for the safety standards. Information from the missions is systematically collected to update national safety profiles that are used to plan and prioritize further assistance activities.

The safety standards on management systems will be the basis for the concept of management of safety as it is described in the policies and procedures of an organization, as well as for safety culture, which reflects the actual attitude and behaviour of individuals or groups towards safety. Management of safety and safety culture will be further strengthened through the integration in the various safety assistance and review services, thereby reaching more organizations involved in nuclear activities. Appropriate modules will be tailored for these services and guidance and assistance will be provided to organizations that perform self-assessments as part of the process of improving their safety culture.

Duration: 2006–2007

Ranking: 2

Recurrent Project J.2.03: Implementing a strategy for sustainable education and training in nuclear installation safety

Main outputs: Standard training material for use by lecturers and students on topics of nuclear installation safety will be developed by the Agency, as well as packages to train the trainers in nuclear safety subjects using modern educational tools (e.g. distance learning). Networks between national and regional training centres will by established.

Ranking: 2

Recurrent Project J.2.04: Sharing information and knowledge on nuclear safety

Main outputs: The activities in nuclear installation safety will be promoted through the web site. Platforms will be developed for some types of information, connecting the Agency and Member States and providing different levels of access and technical information commensurate with the user's needs (technical community and public). Another activity will be the establishment and support of nuclear safety networks of national centres of countries providing and receiving assistance in the framework of the project.

Ranking: 3

Subprogramme J.3. Development and Use of Advanced Tools for Safety Assessment

Rationale: Advanced tools for safety assessment are being used to enhance nuclear safety and also to reduce operating costs by making better use of existing safety margins. Advanced methods to estimate safety margins are required to assess power uprates, use of new fuel or longer operating cycles. New reactor designs with broader use of passive systems also require new best estimate methods for safety analysis. More extensive consideration of severe accidents in the design basis and accident management measures are required to better model phenomenological and time dependent aspects. Increasing use is being made of computer based

systems. More attention is being given to the human impact on nuclear safety.

Defence in depth will remain an essential nuclear safety strategy for both existing as well as new NPPs and other installations. Advances in probabilistic safety assessment (PSA) make it possible to better integrate the deterministic and probabilistic approaches and to risk-inform the Agency's safety standards.

There is increasing support for the use of PSA and safety performance indicators at nuclear installations to monitor and optimize safety performance. This experience needs to be exchanged at the international level. Regulatory authorities are using the new tools in their effort to increase efficiency and effectiveness.

Objectives:

— To reach international consensus on the use of the advanced tools and a graded approach to safety assessment and risk informed regulations and to incorporate this information into the Agency's safety standards.
— To increase the capability of Member States to make use of such tools with enhanced integration of deterministic and probabilistic approaches.
— To increase efficiency, effectiveness and transparency in nuclear safety by making use of PSA and safety performance indicators.

Outcome
— Use of a graded approach of advanced safety assessment methods for nuclear installations in Member States.
Performance Indicators
— Number of safety review services for the subprogramme completed. — Percentage of safety standards documents reviewed and updated as required. — Percentage of issues associated with safety review service recommendations adequately addressed by Member States.

Programmatic changes and trends: Building on the earlier achievements, efforts in 2006–2007 will be devoted to incorporating the international consensus achieved on advanced deterministic and probabilistic safety analysis and risk informed regulations into the Agency's standards and other guidance documents. Increasing attention will be devoted to computational safety analysis tools for research reactors and fuel cycle facilities. A users group will be established to learn from experience in the use of safety performance indicators to help monitor safety performance. Lagging and leading indicators will be explored. Special emphasis will be devoted to the use of performance indicators by regulatory authorities. Attention will be given to knowledge preservation by developing training tools.

Resource changes and trends: The proposed resources for Subprogramme J.3 amount to €1 127 700 in 2006, reflecting a decrease in the budget of €157 000, or 12.2%, compared with 2005, with a further decrease of €15 200, or 1.3% in 2007 compared with 2006. The decrease is mainly due to the completion of two CRPs and the phasing out of the 2004–2005 project on Strengthening quality assurance in the safety of nuclear installations.

Financial resources (2005 prices)

J.3	2005	2006	2007
Reg. budg.	1 284 700	1 127 700	1 112 500

Projects

Project J.3.01: Harmonizing the use of advanced safety analysis methods for long term operation of existing NPPs and for innovative designs

Main outputs: Guidance will be provided for use of advanced safety analysis methods, such as best estimate methods and computational fluid dynamics methods, in support of long term operation and higher operational flexibility of existing NPPs, with more stringent requirements on quantification of safety margins.

Agency safety services and relevant training activities will be offered to assist in dissemination and harmonization in the use of developed tools among Member States, mainly devoted to review of safety analysis reports, and of analytical support for emergency operating procedures and accident management programmes.

Further guidance will be developed for safety analysis of innovative reactor designs, taking into account broader use of passive systems and new engineering solutions in general.

The Safety Guide on development and implementation of accident management programmes will be issued and the reference document for the safety service missions on review of accident management programmes will be updated accordingly. In addition to these reviews, provisions will be made for the self-assessment by NPP operators. New research results will be incorporated into relevant guidance documents regarding accident management programmes of existing NPPs and for evaluation of design features for innovative design.

Methods will be further developed to facilitate self-assessment by the utilities of defence in depth of existing NPPs as well as innovative reactor designs, including quantifications of defence in depth by means of a probabilistic approach.

Duration: 2006–2007

Ranking: 2

Project J.3.02: Assisting in the use of safety management tools

Main outputs: This project will result in guidelines and technical reports on the development and application of modern safety management tools to assess and enhance nuclear safety and analysis of the feedback from its usage. Guidance will be available to assist the regulators in the development and use of a set of safety performance indicators consistent with the framework used by licensees in their own regulatory processes.

Duration: 2006–2007

Ranking: 1

Subprogramme J.4. Design Safety and Site Evaluation

Rationale: A significant number of NPPs are embarking on life extension programmes and requesting the support of the Agency in this matter. This is expected to become a new and important safety issue in the coming years. Therefore there is a need to develop appropriate tools in order to address issues related to safe long term operation of NPPs and to propose adequate services to Member States including exchange of information, training and safety reviews.

Regarding evolutionary reactors, it is necessary to maintain the Agency's safety standards through constant review and development. The case of plants built in countries different from that of original design is common practice and an internationally agreed licence scheme and procedure to deal with these situations should be envisaged.

The Agency's INPRO Phase I has developed the user requirements for innovative reactors to be built in the coming decades. The Generation IV project is carrying out an extensive research for the development of several promising innovative concepts. Safety considerations will play an important role in the selection of the reactor concept and for this reason there is a need to provide guidance for safety-driven design development.

In the field of site evaluation and assessment of the effects of hazards, there is now a need to cover nuclear facilities other than NPPs, external hazards other than earthquakes, and internal hazards other than fire, and to provide the corresponding services in a manner consistent with the newly revised safety standards. As major contributors to common cause failures external hazards deserve a more thorough evaluation with the aim to reduce their associated uncertainties.

The environmental impact report is now generally considered as a part of the site evaluation process for new nuclear installations. Its review necessitates the preparation of relevant safety standards.

Objectives:

— To increase the capabilities of Member States to manage the long term safety of existing nuclear facilities.

— To enhance the capabilities of Member States to perform self-assessment of the compliance of the design or upgrading measures with the Agency's safety standards

— To increase the capabilities of Member States to achieve a high level of safety in the design of innovative and evolutionary reactors.

Outcomes
— Safety driven design concepts for innovative NPPs. — Adequate engineering safety levels in evolutionary NPP designs and existing NPP upgrades. — Incorporation of adequate safety measures in long term operation plans for nuclear installations. — Consistent approach to safety in relation with external hazards.
Performance Indicators
— Number of safety review services for the subprogramme completed. — Percentage of safety standards documents reviewed and updated as required. — Percentage of issues associated with safety review service recommendations adequately addressed by Member States.

Programmatic changes and trends: It is expected that in the coming years, in the context of life extension or life duration of NPPs, assessments relating to long term operation will become a prominent activity in the field of engineering safety. This evolution which was already anticipated for the 2004–2005 cycle is expected to further grow in 2006–2007.

It is also expected that more tangible designs for innovative reactors will be available and review services for these will be requested either by suppliers or by the recipient country.

Resource changes and trends: The proposed resources for Subprogramme J.4 amount to €1 394 000 in 2006, reflecting an increase in the budget of €155 700, or 12.6%, compared with 2005, with a decrease of €8 100, or 0.6% in 2007 compared with 2006. The increase in resources reflects the importance given to the evaluation of external/internal hazards and site safety.

Financial resources (2005 prices)

J.4	2005	2006	2007
Reg. budg.	1 238 300	1 394 000	1 385 900

Projects

Recurrent Project J.4.01: Enhancing safety of innovative and evolutionary NPPs

Main outputs: The project will result in updated safety standards and documents relating to the safety of innovative reactors, in particular technical guidance for their safe design. Review reports will be provided to designers of innovative reactors so as to assess the compliance of the design with the accepted safety approach. Review reports will be provided to Member States in order to assess the compliance of the evolutionary designs with the safety standards, and providing inputs for the revision of the standards.

Ranking: 1

Recurrent Project J.4.02: Providing for the design safety for long term operation

Main outputs: The main outputs will consist of guidelines of a safety review service that will encompass the scope of the ageing management assessment (AMAT) service and enlarge it to other design safety facets of long term operation such as design basis documentation. Review reports will be provided, addressing long term operation safety issues, assessing their resolution degree and making recommendations for their resolution.

Ranking: 2

Recurrent Project J.4.03: Providing for the evaluation of external/internal hazards and site safety

Main outputs: The main outputs will consist of new guidelines of the site safety review services with a scope enlarged to external events other than earthquakes and to the preparedness in case of an extreme or rare external event. Review reports will be provided, addressing safety issues relating to hazards and to site evaluation, assessing their resolution degree and making recommendations for their resolution.

Ranking: 3

Subprogramme J.5. Operational Safety

Rationale: Lessons learned from recent events, the significant number of older plants applying for the long term operation and an emerging trend of new plants under construction that are multicultural projects indicate that operational safety will continue to be of significant importance in the future. Nuclear power plants continue to request Operational Safety Review Team/Peer Review of Operational Safety Performance Experience (OSART/PROSPER) missions for a variety of reasons. These include: the desire for international independent assessment to assist in continuous improvement programmes; regulatory and national programme requirements; periodic safety review input; life cycle extension input and international peer reviews following event related issues. The strategic direction is designed to meet the needs for requested services with the objective of optimizing resources and avoiding duplication with other safety related services.

The background and, in part, the basis for this subprogramme is in response to Member States' recommendations made during the most recent Topical Issues Conference, the Advisory Group Meeting on "Issues and Challenges" of 2003, the technical meeting in June 2003 that discussed lessons learned from recent events in developed countries, the programme evaluation report on the Agency's safety review services (February 2004), the March 2004 Board of Governors meeting and General Conference resolution (45)/10, which encouraged Member States to request Agency's safety review services. This subprogramme will also be responsive to special investigative service requests by Member States.

Due to the fact that the process of OSART/PROSPER safety review is based on IAEA Safety standards, they represent a unique set of tools that can be used for the harmonization of operational safety in NPPs around the world. In addition, results are being used to provide issues and trends for preparation of country reports under the Convention on Nuclear Safety.

Objectives:

— To enhance Member States capabilities to manage and maintain a high level of safety in nuclear installations through the application of Agency safety standards; operational safety review services, and the dissemination of good practices with Member States.
— To enhance the capabilities of Member States to perform self-assessment at their NPPs according to the OSART/PROSPER methodology, based on Agency safety standards.

Outcome
— The safety improvements realized in nuclear installations by Member States, based on Agency recommendations and suggestions from the application of safety standards and information from operational experience feedback programme.
Performance Indicators
— Number of safety review services for the subprogramme completed. — Percentage of safety standards documents reviewed and updated as required. — Percentage of issues associated with Safety Review Service recommendations adequately addressed by Member States.

Programmatic changes and trends: The strategic direction will be focused on the integration of operational safety activities, while keeping the high quality of services, maintaining qualification of experts from Agency and Member States and using feedback from services for their further improvement and for improvement of the Agency's safety standards. New developments will include review and assistance activities to enhance knowledge transfer through dissemination of good practices and lessons learned from recent trends. The use of Member State experts for the conduct of safety review services will be sustained and increased. A new and important challenge for this subprogramme will be the enhancement of communication and technical exchange for multicultural projects with the aim to be more tailored to the needs of Member States. Another challenge will be to support initiatives for maintaining nuclear competence in all sectors and at all levels of the industry including nuclear power plants, vendors and contractors. Finally this subprogramme will also support the development of methods to safely manage and operate ageing plant in an increasingly competitive economic environment.

This subprogramme will serve to integrate new concepts for cross-cutting activities such as training and education, operating experience feedback, safety management and safety culture.

The accomplishment of missions should become more risk-informed.

Resource changes and trends: The proposed resources for Subprogramme J.5 for 2006–2007 are virtually the same as in 2005. The amount of €1 587 600 proposed for 2006 reflects a slight increase of €400 over the budget for 2005, while there is a decrease of €7 300, or 0.5% in 2007 in comparison with 2006.

Financial resources (2005 prices)

J.5	2005	2006	2007
Reg. budg.	1 587 200	1 587 600	1 580 300

Projects

Recurrent Project J.5.01: Enhancing operational safety performance

Main outputs: This project will result, on request by Member States, in mission reports to be issued on safety review (OSART) services provided to strengthen operational safety in specific areas in the management of safety in nuclear installations during times of change; the Agency safety standards on "The Safety of Nuclear Power Plants: Operation"; a TECDOC on OSART highlights containing recommendations for improvements in operational safety and good industry practices will be issued based on the most current results of the safety reviews; the OSART Missions Results Database (OSMIR) will continue to be made available to Member States on CD-ROM; mission results will continue to provide input on "issues and trends" for Member States use in preparing country specific reports for the Convention on Nuclear Safety; a report will be issued on the "Evaluation of the Effectiveness of Agency Operational Safety Services"; a discussion forum on the Agency's web site for sharing information on good practices and safety improvements will continue to be made available; the results of the December 2005 conference on "Operational Safety Performance" will highlight how Member States have enhanced their capabilities to manage and sustain a high level of safety during the life cycle of nuclear installations; new Agency concepts for cross-cutting activities such as training, operating experience and management systems, will be integrated as appropriate into safety reviews; self-assessment training for Member States on OSART methodology and field inspections will continue to be conducted.

Ranking: 1

Recurrent Project J.5.02: Providing for the sharing of operational safety experience

Main outputs: This project will result, on request by Member States, in mission reports to be issued on safety review (PROSPER) services provided to strengthen operational experience feedback programmes. TECDOCs will be developed to cover all aspects of the management and conduct of an effective operational experience feedback programme.

A database of results from PROSPER missions and the OSART Operational Experience Module will be developed and updated regularly.

Ranking: 2

Subprogramme J.6. Safety of Research Reactors and Fuel Cycle Facilities

Rationale: General Conference Resolution GC(45)/RES/10 endorsed the Board of Governors' decision to request the Secretariat to develop and implement, in conjunction with Member States, an international research reactor safety enhancement plan. A key element of this plan is preparation of a Code of Conduct on the Safety of Research Reactors. This Code of Conduct was adopted by the Board in 2004. Resolution GC(48)/RES/10 encouraged Member States to apply the guidance in the code to the management of research reactors. It is now necessary to define instruments to fulfil the Agency responsibilities to assist Member States in its application. It is essential to improve relations with and between Member States, helping to develop regional strategies for application of the Code of

Conduct, for international utilization of research reactors and for mutual assistance to solve safety issues. Support of research reactors as a cross-cutting issue will continue to ensure proper coordination of assistance and services provided to Member States. Completion of new safety standards for research reactors, review of existing standards and promotion of their use will continue as one of the mandates. Assistance in improving regulatory authority effectiveness has a high priority within this mandate. Resolution GC(47)/RES/7 requests the continued assistance of the Secretariat to monitor and improve the safety of research reactors, particularly those subject to Project and Supply Agreements and to continue the survey on the safety status of research reactors. The Conference on "Research Reactor Utilization, Safety, Decommissioning, Fuel and Waste Management", Santiago, Chile, in November 2003, concluded with a series of recommendations on safety issues, such as encouraging work in probabilistic safety analysis for research reactors, launching programmes to evaluate thermal-hydraulic codes, and promotion of 'centres of excellence', developing guidance for periodical reviews, increasing awareness of the safety of experiments, and enhancing management systems and security. The Incident Reporting System for Research Reactors (IRSRR) will be continuously enhanced to make it available as part of a network on safety of research reactors to facilitate access through the Internet, and include the evaluation of events to learn from experience.

The 2001 Conference on Topical Issues in Nuclear Safety — Safety of Fuel Cycle Facilities concluded that the Agency should: (1) continue to promote the safety of fuel cycle facilities by establishing adequate safety standards, to be used as a basis for safety services; (2) adapt existing safety services for NPPs and research reactors where appropriate to enable their use for fuel cycle facilities, especially in the field of operational safety and comprehensive safety assessment; (3) build on a long standing activity to collect and disseminate information on events, experiences and lessons through information exchange and analysis in cooperation with the OECD/NEA on its FINAS database; (4) develop and hold training courses on the safety of fuel cycle facilities, especially on criticality safety, including the use of existing experimental facilities in some countries; (5) adapt the experience gained with the establishment and application of safety performance indicators for NPPs; and (6) support Member States in safety management assessment and promote safety culture for fuel cycle facilities.

For the enhancement of the safety of fuel cycle facilities, it is essential that the above activities started in the previous years be completed and/or implemented as long standing safety advisory, review and fostering services to Member States.

Objectives:

— To enhance the safety of research reactors in Member States through applying the Code of Conduct, developing safety standards and conducting integrated safety assessment missions.
— To enhance the safety of fuel cycle installations in Member States through the adoption of safety standards and safety related publication, and implementation of derived services.

Outcomes
— Application of the Code of Conduct on the Safety of Research Reactors in Member States.
— Broad application of Agency safety standards for the enhancement of operational safety of research reactors and fuel cycle installations in Member States.
— Fulfillment of obligations by Member States and the Agency in relation to reactors subject to Project and Supply Agreements.
— Comprehensive set of up to date safety standards for fuel cycle facilities and research reactors.
Performance Indicators
— Number of Member States applying the Code of Conduct.
— Percentage of Agency recommendations and/or suggestions given in mission reports implemented by Member States.
— Updated and improved safety status of research reactors subject to Project and Supply Agreements.
— Completion of the set of safety standards for fuel cycle installations and research reactors.

Programmatic changes and trends: The Code of Conduct will provide an important tool to secure political commitment to improve the overall safety of research reactors. It will also promote the use of Agency safety standards. The Web based Incident Reporting System for Research Reactors will continue receiving more attention from Member States and better cooperation among participating members will be established. The focus will be the application of the Code of Conduct, the Agency safety standards and recommendations given after the meeting held in 2005 for research reactors with a Project and Supply Agreement. The issues detailed in the previous cycle were addressed by expert missions and training activities resulting in an increased number of operating organizations establishing management systems, completing mandatory documentation, and increasing the competence of regulators to assess the safety of research reactors.

In 2002, activities were initiated with the primary objective to complete a set of facility specific safety standards to address all types of fuel cycle installations. The main changes expected for the period 2006–2007 is the increased Agency's involvement in support to the implementation in the Member States of the safety standards and related documents through various Agency's services.

Resource changes and trends: The proposed resources for Subprogramme J.6 amount to €1 135 500 in 2006, reflecting a decrease in the budget of €100 000, or 8.1% compared with 2005, and an increase of €31 100, or 2.7% in 2007 over 2006. The decrease is the result of increased reliance on extrabudgetary funding, especially in the area of research reactors.

Financial resources (2005 prices)

J.6	2005	2006	2007
Reg. budg.	1 235 500	1 135 500	1 166 600

Projects

Recurrent Project J.6.01: Enhancing the safety of research reactors

Main outputs: This project will result in training in the application of the Code of Conduct. Missions will be carried out to work with Member States in developing strategic utilization plans, refurbishment plans, fuel and core management (conversion to LEU), planning of decommissioning programmes, and sharing of experience. Research results will be made available by means of a publication on a new CRP on modelling and analysis of radionuclide transport and source term evaluation within containment/confinement and release to the environment by research reactors. Other outputs will include safety standards, proceedings from an International Conference on Research Reactors in the year 2007 and a new updated version of the IRSRR. Recommendations of Agency missions will be made for the enhancement of the safety of research reactors. Tools will be provided for the enhancement of the self-assessment capabilities of Member States.

Ranking: 1

Recurrent Project J.6.02: Monitoring and safety enhancement of research reactors under agreement

Main outputs: This project will result in: mission reports with recommendations for safety improvements; reviews of all requests for assistance for reactors subject to Project and Supply Agreements to verify compatibility with safety priorities; biennial reports on the current safety status of each research reactor subject to a Project and Supply Agreement. Assistance will be provided to Member States to enhance the safety of research reactors.

Ranking: 2

Recurrent Project J.6.03: Enhancing the safety of fuel cycle facilities

Main outputs: Under this project the last safety guides of the set of fuel cycle facilities standards will be produced. On request of Member States, operational safety review missions will be conducted and mission reports produced. Training material will be developed and seminars and training courses/workshop delivered.

Ranking: 1

Programme K. RADIATION AND TRANSPORT SAFETY

Rationale: This programme is concerned with the protection of people — workers, patients and members of the public — and the environment from the detrimental effects attributed to radiation exposure. It covers the establishment of safety standards relating to radiation sources, including radioactive materials, and providing for the application of those standards, both being statutory functions of the Agency and essential components of a global regime of radiation and transport safety and therefore necessitating continuing action by the Agency. Because safety and security are inseparable, the security of radioactive materials is included in this programme; the prevention and detection of, and response to malicious acts involving radioactive materials, however, are covered under Programme M.

The Agency is also responsible under its Statute for requiring the observance of health and safety measures with respect to, inter alia, operations under its control or supervision and any Agency projects.

In 1962 the Board approved the first radiation safety standards and, in 1994, the current International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (BSS), which is jointly sponsored by FAO, ILO, OECD/NEA, PAHO, WHO and the Agency. An early decision of the United Nations Economic and Social Council (ECOSOC) had already entrusted specific radiation safety duties to the Agency in relation to safety in the transport of radioactive materials and as a consequence, the Board has — starting in 1961 — approved Regulations for the Safe Transport of Radioactive Material. Both 'Safety Requirements' are supported by 'Safety Guides', which contain recommendations for meeting the requirements.

There is considerable benefit associated with reaching international consensus on the content of radiation safety standards, including those for the transport of radioactive materials, and the Agency is in a unique position to do this. In March 2004, the Board approved the International Action Plan for the Development and Application of IAEA Safety Standards given in GOV/2004/6. This Action Plan was prepared to fulfil the vision of the Agency's safety standards as the global reference for protecting people and the environment through the creation and maintenance of a set of harmonized safety standards of high technical quality that takes account of recent trends and developments. It also aims at strengthening the application of the Agency's safety standards as a basis for the provision of assistance to Member States.

During the period covered, emphasis will be given to the thorough review and revision of the BSS and associated safety standards, as well as the on-going review and revision of the Regulations for the Safe Transport of Radioactive Material. Support to Member States in their development of appropriate infrastructures to implement those standards will also continue covering integrated safety evaluations, sustainable education and training, a harmonized approach to technical cooperation and assistance, and strengthened information and communication networks.

In a number of recent resolutions, the General Conference has requested the Secretariat to carry out specific activities on radiation and transport safety — in particular, activities relating to:

— The safety standards programme (GC(48)/RES/10A),
— The development of radiation protection infrastructures (GC(48)/RES/10A),
— Education and training in radiation protection and nuclear safety (GC(48)/RES/10A),
— The International Action Plan for Occupational Radiation Protection (GC(48)/RES/10A),
— The International Action Plan for the Radiological Protection of Patients (GC(48)/RES/10A),
— The Code of Conduct on the Safety and Security of Radioactive Sources and the revised Action Plan for the Safety and Security of Radioactive Sources (GC(48)/RES/10D),
— The safety of transport of radioactive material (GC(48)/RES/10C).

The main beneficiaries of the Agency's radiation safety programme are national authorities dealing with radiation safety issues, and certain international organizations. Derived beneficiaries are workers exposed to radiation, patients undergoing radiodiagnostic, interventional and radiotherapeutic procedures, members of the public, and users and operators of facilities involving radiation exposure.

Objective: To achieve global harmonization of radiation and transport safety standards and for the safety and security of radiation sources and thereby to raise the levels of protection of people, including Agency staff, against radiation exposure.

Outcomes
— International consensus achieved in Agency radiation and transport safety standards.

Outcomes (cont'd)
— Corrective action taken – by Member States which requested Agency services and received training – on targeted strengthening of their radiation safety infrastructure.
— A fully operational radiation safety infrastructure within the Agency.
Performance Indicators
— Radiation and transport safety standards approved in accordance with the relevant International Action Plans.
— Percentage of accomplishments in line with the assessment criteria established for Radiation Safety Infrastructure Appraisals.
— Degree of compliance with the revised Radiation Protection Rules and Procedures.

Specific criteria for prioritization:

— First priority is given to establishing standards and servicing conventions.

— Second priority is given to the application of standards.

— Third priority is given to strengthening information exchange.

Subprogramme K.1. Radiation Safety Standards

Rationale: The basic statutory responsibility is for the establishment of safety standards, based in solid radiation protection principles, which are seen as the global reference. A suite of relevant safety standards has been developed over many years. In keeping with the International Action Plan for the Development and Application of IAEA Safety Standards, these standards need to be kept up to date with developments in technical knowledge and approaches to safety and any gaps need to be filled. In particular, the Action Plan indicates that, typically, safety standards should be reviewed every 5–6 years to determine whether and when they need to be revised. Therefore, considerably more attention will be paid to all radiation safety related standards and associated documents.

When the Board of Governors first approved radiation protection and safety measures in 1960, it was stated that "The Agency's basic safety standards … will be based, to the extent possible, on the recommendations of ICRP". These, in turn, are based on the reports on levels and effects of radiation provided by the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR).

There is also a need to provide support to the Director General for the regulation of the Agency's own activities involving the use of radiation. Article III.A.6 of the Statute obliges the Agency "to provide for the application of [its safety] standards to its own operations".

Safety standards and related guidance material need to be maintained and further developed in the area of radiological protection in emergency intervention situations. In view of the fact that the standards and guidance in this area are developed in close cooperation with other disciplines that form the foundation of radiation safety, a project on this subject has been included in this subprogramme.

Objective: To protect people from ionizing radiation through the establishment of high quality radiation safety standards, and guidance.

Outcomes
— International consensus achieved on Agency radiation safety standards.
— Internal regulatory system that is in accordance with the Agency's revised Radiation Protection Rules and Procedures.
Performance Indicators
— Number of radiation safety standards approved in accordance with the relevant International Action Plans.
— Degree of compliance with the revised Radiation Protection Rules and Procedures.

Programmatic changes and trends: This subprogramme focuses on the establishment and review of the radiation safety standards, on fostering international approaches to radiation safety, and appraising compliance of the Agency's own operations with the Radiation Protection Rules and Procedures which are based on the Agency's radiation safety standards. As such it further develops some of the activities carried out within the 2004–2005 subprogramme on National and Global Infrastructure Enhancement for Radiation and Transport Safety (former Subprogramme K.1), and the subprogramme on Application of Safety Standards to the Agency's own Operations (former Subprogramme K.3). In addition, a new project on radiological protection in emergency intervention situations has been added and will be carried out in close coordination with Subprogramme X.1 (Incident and Emergency Preparedness and Response). A major component of the subprogramme's work in 2006–2007 will be the assessment of the implications of the 2005 recommendations of the ICRP for the BSS.

Resource changes and trends: The proposed resources for Subprogramme K.1 amount to €768 600 in 2006, reflecting a decrease in the budget of €4 400, or 0.6%, compared with 2005, with an increase of €2 000, or 0.3% in 2007 over 2006,

representing minor adjustments in programme requirements.

Financial resources (2005 prices)

K.1	2005	2006	2007
Reg. budg.	773 000	768 600	770 600

Projects

Recurrent Project K.1.01: Developing radiation safety standards and fostering international approaches to radiation safety

Main outputs: The International Basic Safety Standards for the Protection against Ionizing Radiation and for the Safety of Radiation Sources will be reviewed and revised. Safety Reports relating to practical advice for regulatory bodies will be developed.

Ranking: 1

Recurrent Project K.1.02: Appraising compliance with and maintaining review of the Agency's radiation protection rules and procedures

Main outputs: Based on the IAEA's Radiation Protection Regulations, the regulatory functions of the Secretariat will be established.

Ranking: 1

Project K.1.03: Radiological protection in emergency intervention situations

Main outputs: A Safety Guide on the technical criteria for response to an emergency intervention situation will be developed. Practical and coherent guidance for response by law enforcement personnel and other emergency services will be published.

Duration: 2006–2010

Ranking: 1

Subprogramme K.2. Radiation Safety Infrastructures

Rationale: Providing for the application of the safety standards is a statutory function of the Agency. Full and proper implementation of the safety standards requires that the necessary national regulatory infrastructure exists in a State, in particular that a regulatory authority has been established by the government to regulate the introduction and conduct of any practice involving sources of radiation.

There is an international consensus on the understanding that effective national radiation safety infrastructures are essential for ensuring long term safety, security and control of vulnerable and dangerous radioactive sources (e.g. BSS, International Conference on Security of Radioactive Sources, Vienna, 10–13 March 2003; International Conference on National Infrastructures for Radiation Safety, Rabat, 1–5 September 2003 and the Code of Conduct on the Safety and Security of Radioactive Sources). In this framework there are increasing efforts intended to enhance and appraise the radiation safety infrastructure of all Member States and therefore there is a need for collecting/managing/analysing information properly to proactively act to rectify the safety gaps, to disseminate best practices and lesson learned, and to promote synergies. In this connection, the existing Country Radiation and Waste Safety Profiles (CRWSPs) are a good example of knowledge management that is being used as a tool by all stakeholders.

Although considerable efforts have been made towards the establishment or upgrading of an adequate national regulatory infrastructure, many Agency reports (appraisal, fact finding and expert mission reports) which have been acknowledged by the Board of Governors, clearly indicate that more than 30% of the Member States still lack an effective national legislative and regulatory system of control over the management of radiation sources. The situation seems to be worse in non-Member States.

Many Member States lack the necessary expertise to establish and operate an effective and sustainable regulatory programme, and require substantial support for the development of their regulatory infrastructure, in particular during the preparation of their regulations and development of their systems of control. The importance of the Agency’s role in supporting the development of national infrastructures has been highlighted in a number of General Conference resolutions, the most recent of which was GC(48)/RES/10A. An effective means of providing such support is the provision of the Agency’s appraisal services to regulatory authorities for radiation safety. Such appraisals are also valuable for those Member States assumed to have effective regulatory programmes to ensure that they are comprehensive and up to date.

A further emphasis will be placed on sustainable education and training programmes; such programmes being seen as fundamental to any safety infrastructure. This view is supported by a number of General Conference resolutions, the most recent of which was GC(48)/RES/10A. The Agency has an action plan for education and training, approved by the Board of Governors, and carries out its activities in this area according to a strategic plan — to have by 2010 sustainable education and training programmes in its Member States.

Efforts will also be made to promote networking as an effective instrument for enhancing the sharing of knowledge and experience, a key to the implementation and harmonization of the application of standards. All activities within the framework of this subprogramme will be implemented as part of an integrated safety approach.

Objective: To achieve effective and sustainable national regulatory infrastructures, and to provide for the application of the safety standards through safety appraisals and services, the provision of technical assistance to Member States and sustainable education and training.

Outcome
— Corrective action taken to improve national regulatory infrastructure for radiation safety by Member States which requested Agency assistance.
Performance Indicator
— Percentage of accomplishments in line with the assessment criteria established for radiation safety infrastructure appraisals.

Programmatic changes and trends: This subprogramme further develops some of the activities carried out within the 2004–2005 subprogramme on National and Global Infrastructure Enhancement for Radiation and Transport Safety (former Subprogramme K.1), and the related subprogramme for Radioactive Waste Safety (former Subprogramme L.1), combined with the subprogramme on Information and Communication Networks for Radiation and Transport Safety (former Subprogramme K.2). A major component of this work in 2006–2007 will be the implementation of the policy and actions to promote effective and sustainable national regulatory infrastructures for the control of radiation sources in accordance with GOV/2004/52-GC(48)/15.

Resource changes and trends: The proposed resources for Subprogramme K.2 amount to €1 123 900 in 2006, reflecting a decrease in the budget of €77 000, or 6.4%, compared with 2005, with a further decrease of €14 000, or 1.2% in 2007 compared with 2006. The decrease is the result of increased reliance on extrabudgetary funding, especially in the area of strengthening national regulatory control and promoting integrated safety evaluations.

Financial resources (2005 prices)

K.2	2005	2006	2007
Reg. budg.	1 200 900	1 123 900	1 109 900

Projects

Project K.2.01: Strengthening national regulatory control and promoting integrated safety evaluations

Main outputs: Radiation Safety Infrastructure Appraisal (RaSIA) Services for detailed assessment of the effectiveness of the national regulatory infrastructure, including the safety and security of radioactive sources, will be provided at the request of Member and non-Member States, and relevant supporting material developed. Workshops and networks on regulatory infrastructure will be organized.

Duration: 2006–2010

Ranking: 2

Recurrent Project K.2.02: Implementing a strategy for sustainable education and training in radiation and transport safety

Main outputs: A TECDOC on guidelines and planning, design and implementation of on-the-job training will be developed. Training material as well as interactive training modules for e-learning will be developed. Regional train-the-trainers workshops will be organized.

Ranking: 2

Recurrent Project K.2.03: Maintaining information and harmonizing technical support to Member States

Main outputs: The mechanism to target provision of technical assistance for the strengthening of radiation safety infrastructures in Member States will be maintained.

Ranking: 2

Subprogramme K.3. Occupational Radiation Protection

Rationale: This subprogramme covers three main areas: the statutory function of establishing standards of safety on occupational radiation protection, and providing for their application; the statutory function of fostering information exchange through the organization of international intercomparison exercises; and the statutory obligation of the Agency for radiation protection and the safety of staff members and experts who may be exposed to radioactive material due to activities conducted by the Agency. The subprogramme is based on an action plan on occupational radiation protection, approved by the Board of Governors in September 2003, and the revised Agency Radiation Protection Rules and Procedures.

Although the development of occupational radiation protection standards and supporting documents within the Agency is generally well advanced, there are gaps in the Agency's guidance on the difficult issue of exposure to natural radiation. Clear and complete standards-related guidance and information is needed, in the form of documents, education and training, networking and other forms of information exchange. A particular challenge is for all of this to be achieved as part of a holistic approach to health and safety, taking both radiological and non-radiological hazards into account. Achievement of this objective, which will require ongoing and strengthened cooperation with the ILO, will help to

bring about an internationally coherent approach to protection against natural radiation and other hazards associated with work with raw materials that will support the twin aims of (a) ensuring safe working conditions in all affected industries and (b) encouraging rather than discouraging industrial development, especially in developing countries.

Pursuant to General Conference resolution GC(43)/RES/13, the Secretariat is organizing interregional and regional intercomparison exercises for monitoring purposes with a view to helping Member States to comply with dose limitation requirements and to harmonizing the use of internationally agreed quantities and assessment methods recommended in Agency standards.

The Agency's Statute, in Article III/A/6, requires the application of international safety standards to its own operations. Pursuant to several reviews of the Agency's radiation monitoring services and its Radiation Protection Rules and Procedures the need for further strengthening and optimizing protection and control of the safety and security of radiation sources has been recognized. The provision of radiation monitoring services, training and advice is an ongoing activity, although subject to continuous improvement. The Agency has very recently established a quality management system for its radiation protection services. The challenge for the Agency is not only to continuously improve its radiation monitoring services and control of the radiation sources it uses, but also to become a centre of excellence and model for its Member States in implementing international standards.

Objectives:

— To ensure the global harmonization and optimization of occupational radiation protection in situations of occupational exposures due to external radiation and intakes of radionuclides from both artificial and natural sources of radiation.

— To gain international acceptance of the use of radiological quantities and their measurement techniques for radiation protection purposes.

— To ensure a high level of radiation protection for the Agency's own operations and for all operations making use of materials, services, equipment, facilities and information made available by the Agency, including technical cooperation projects.

Outcomes
— International consensus achieved on guidance for ensuring that occupational exposure to natural and artificial radiation is adequately and appropriately controlled. — Provision of adequate radiation monitoring and protection services for Agency operations and on Agency premises.

Performance Indicators
— Number of Member States which are adequately controlling occupational exposure to radiation according to Agency/ILO guidance. — Compliance with the Agency's radiation protection regulations.

Programmatic changes and trends: This is a continuation of the subprogramme on Occupational Radiation Protection (former Subprogramme K.4) in 2004–2005, combined with activities from the subprogramme on Application of Safety Standards to the Agency's own Operations (former Subprogramme K.3) in 2004–2005. The International Action Plan for Occupational Radiation Protection approved by the Board of Governors in September 2003 served to focus the programme on improving the level of occupational radiation protection in Member States by further strengthening the cooperation with the ILO and by putting greater emphasis on information exchange through networking and dissemination of information to all stakeholders, i.e. regulators, employers, workers and radiation protection professionals.

Resource changes and trends: The proposed resources for Subprogramme K.3 amount to €832 200 in 2006, reflecting a slight increase in the budget of €1 600, or 0.2%, compared with 2005, with a small decrease of €6 000, or 0.7% in 2007 compared with 2006. These changes represent minor adjustments in programme requirements.

Financial resources (2005 prices)

K.3	2005	2006	2007
Reg. budg.	830 600	832 200	826 200

Projects

Project K.3.01: Developing and providing for the application of occupational radiation protection guidance, for both artificial and natural radioactive sources

Main outputs: Occupational radiation protection services will be organized. Guidance on the protection of pregnant workers and their embryos and foetuses will be developed. Guidance on probability of causation from occupational exposure will be finalized. Safety reports on specific NORM industry sectors and practical guidance on NORM monitoring techniques will be developed.

Duration: 2006–2010

Ranking: 2

Project K.3.02: Intercomparing occupational radiation protection monitoring measurements and standardizing radiation protection quantities and units

Main outputs: Results from intercomparison exercises will be disseminated. Technical support

will be provided in all matters concerning the measurement techniques used in occupational exposure assessment and concerning the organization of QA systems in Member States. Advisory services for implementing quality management systems in technical services will be provided.

Duration: 2006–2010

Ranking: 2

Recurrent Project K.3.03: Applying safety standards to the Agency's own operations

Main outputs: Radiation monitoring services will be rendered for the Agency's own operations. This project will also result in: individual dose assessment reports, QMS procedures for technical services, reports on operational radiation protection programmes, and training courses for staff.

Ranking: 1

Subprogramme K.4. Radiological Protection of Patients

Rationale: Consistent with the Agency's structure and approach, work in fulfilment of the Agency's basic statutory functions for the establishment of safety standards and provision for their application with respect to protection of patients is undertaken within this subprogramme. The International Action Plan for the Radiological Protection of Patients, which was approved by the Board in 2002 (GOV/2002/36-GC(46)/12) and endorsed by the General Conference in resolution GC(46)/RES/9, provides much of the basis and effectively defines the actions for the foreseeable future.

In view of the large number of patients exposed to radiation, the potential impact of the Agency's work in this area is huge. Without the Agency's involvement in the development and use of standards, guidance and training material, and the provision of assistance to Member States, opportunities for substantial dose reduction will be missed in both developed and developing countries.

The substantial amount of effort involved in this subprogramme necessitates a truly international approach and it is for that reason that the Action Plan brings together other UN bodies and international organizations and professional societies concerned with patient protection. To keep the various activities under review, a Steering Committee involving these organizations has been established and this has been welcomed by the General Conference in GC(47)/RES/7. The first meeting of the Steering Committee was held in Madrid in January 2004 and resulted in some changes in emphasis to take account of the current needs and the resources available to meet those needs.

Objective: To achieve a high level of radiological protection of patients in medical practices.

Outcome
— Use by Member States of Agency standards and guidance related to the radiological protection of patients in medical practices.
Performance Indicator
— Availability to Member States of guidance on methods to improve the radiological protection of patients in accordance with the Action Plan on the Radiological Protection of Patients.

Programmatic changes and trends: The technical scope of this subprogramme remains unchanged from the 2004–2005 programme: the reduction in the number of projects results from combining two projects from the previous cycle, in an attempt to streamline the overall programme structure. The most important evolution of the subprogramme is the direction given by the Steering Panel of the International Action Plan, assigning highest priority to making "knowledge and awareness" widely accessible through a Web platform and networking, which will become the worldwide reference when searching for authoritative information and answers to every-day questions on patient radiation protection.

Resource changes and trend: The proposed resources for the Subprogramme K.4 amount to €526 900 in 2006, reflecting a decrease in the budget of €4 800, or 0.9%, compared with 2005, with an increase of €18 000, or 3.4% in 2007 over 2006. These changes represent minor adjustments in programme requirements.

Financial resources (2005 prices)

K.4	2005	2006	2007
Reg. budg.	531 700	526 900	544 900

Projects

Project K.4.01: Optimizing radiological protection of patients in diagnostic radiology

Main outputs: An Internet platform with information for professionals and patients will be established. A report on a CRP on dose reduction in computed tomography will be published.

Duration: 2006–2010

Ranking: 2

Project K.4.02: Optimizing radiological protection of patients undergoing interventional procedures using X rays

Main outputs: A report on CRP on evaluating quantitatively and promoting dose reduction approaches in interventional radiology will be published. Training material for non-radiologists

performing fluoroscopic procedures will be developed, and training courses for cardiologists and other interventionalists will be organized.

Duration: 2006–2010

Ranking: 2

Project K.4.03: Optimizing radiological protection of patients in nuclear medicine and preventing accidental exposures in radiotherapy

Main outputs: A Web platform on the radiological protection of the patient in nuclear medicine and on prevention of accidental exposure in radiotherapy will be established.

Duration: 2006–2010

Ranking: 2

Subprogramme K.5. Control of Radiation Sources

Rationale: Radiation sources, utilizing either radioactive materials or radiation generators, are used throughout the world. Many are in the form of sealed sources with radioactive material firmly contained or bound within a suitable capsule or housing. The risks posed by radioactive sources vary widely, depending on such factors as the radionuclide, the physical and chemical form, and the activity. Radiological accidents have happened with radiation sources due to lack of adequate safety and security measures. In addition, the international concern over possible malicious use of sources reinforces the need for security. Actions to address the concerns regarding the hazards associated with radioactive sources have been defined in the Action Plan for the Safety and Security of Radioactive Sources, the third version of which was approved by the Board of Governors in September 2003. This Action Plan provides the basis for the work under this subprogramme.

Also in September 2003, the Board approved the revised Code of Conduct on the Safety and Security of Radioactive Sources, and, by resolutions GC(47)/RES/7 and GC(48)/RES/10D, the General Conference welcomed the Board's approval and endorsed the objectives and principles set out in the Code. The General Conference also encouraged States to act in accordance with the Guidance on the Import and Export of Radioactive Sources (GC(48)/RES/10D).

There is, therefore, a clear need for developing and maintaining a comprehensive set of standards and guidance documents to support States in their efforts to ensure an adequate level of both safety and security of radiation sources, which should cover the whole life cycle of the sources under "normal" conditions as well as in unexpected, incidental or accident situations. The Action Plan also calls for direct assistance to be provided to Member States to assist in regaining control over orphan and vulnerable sources.

There is an absence of adequate guidance on the management of disused sources including those recovered by organizations and individuals (such as scrap dealers, metallurgical plants, customs and police officers, or members of the public) and what are their responsibilities and tasks. If these issues are not addressed, then the risk of serious accidents and malevolent use of radioactive sources will not be reduced; indeed, it may increase.

Objectives: To achieve a level of safety and security of radioactive sources, commensurate with the risks that they pose while not unduly hindering their use.

Outcome
— Improved safety and security of radiation sources throughout the world.
Performance Indicator
— Increase in adherence by Member States to the Code of Conduct on the Safety and Security of Radioactive Sources.

Programmatic changes and trends: The technical scope of this subprogramme remains unchanged. Emphasis will continue to be placed on the implementation of the Action Plan for the Safety and Security of Radioactive Sources.

Resource changes and trends: The proposed resources for Subprogramme K.5 amount to €910 000 in 2006, reflecting an increase in the budget of €99 900, or 12.3%, compared with 2005, with a decrease of €10 000, or 1.1% in 2007 compared with 2006. The increase is attributable to strengthening efforts in the control of radiation sources, in particular in the area of the Code of Conduct, and in the application of safety standards and guidance in Member States.

Financial resources (2005 prices)

K.5	2005	2006	2007
Reg. budg.	810 100	910 000	900 000

Projects

Project K.5.01: Developing guidance for the safety and security of radiation sources

Main outputs: Safety Reports on safety and security of radioactive sources in industry, medicine and research, on national strategies for regaining control over radioactive sources, and on the safety and security of disused sources will be developed.

Duration: 2006–2010

Ranking: 1

Project K.5.02: Regaining control over unsecured radioactive sources

Main outputs: Regional workshops on regaining control over radioactive sources and missions to assist countries in developing/evaluating national strategies will be organized. Fact-finding missions to identify needs for assistance in recovering/securing vulnerable sources will be conducted. Regional workshops on the implementation of the Code of Conduct will be organized.

Duration: 2006–2010

Ranking: 2

Subprogramme K.6. Safety of the Transport of Radioactive Material

Rationale: The Regulations for the Safe Transport of Radioactive Material (the Transport Regulations) have been developed in consultation and collaboration with the UN modal transport organizations and are recognized as the international authoritative standards for both the national and the international transport of radioactive material. The Secretariat has a statutory responsibility to provide for the application of Agency standards, and specifically in the context of the transport of radioactive material been encouraged by the General Conference to provide appropriate appraisal services. The General Conference, in resolution GC(42)/RES/13, requested the Secretariat to provide appraisal services in the area of transport safety to requesting States, subject to resource availability. Later resolutions including, inter alia, GC(48)/RES/10C, encourage Member States to avail themselves of this Transport Safety Appraisal Service (TranSAS). Such services are aimed at enhancing Member State capabilities and infrastructure in both safety and security, and at providing support to the harmonized implementation of the Transport Regulations throughout the world. The General Conference also requested that the Agency implement a Board approved Action Plan that, inter alia, addresses application issues related to training, denial of shipments, transport emergency response and communication of complex technical issues.

Objective: To achieve a globally harmonized approach to the safe and secure transport of radioactive material.

Outcome
— International consensus achieved in Agency transport safety standards.
Performance Indicator
— Transport safety standards approved according to the programme established by the Board of Governors.

Programmatic changes and trends: The technical scope of this subprogramme remains largely unchanged from the 2004–2005 programme but there has been a reduction in the number of projects resulting from a combining of projects in the previous cycle and account has been taken of the findings of the 2003 Conference and the Action Plan that was approved by the Board of Governors in March 2004. The maintenance of the Agency's Transport Regulations and providing for their application through appraisal services will remain central to this subprogramme, but consideration will continue to be given to the security of materials in transport and the problems posed by the denial of shipments.

Resource changes and trends: The proposed resources for Subprogramme K.6 amount to €793 800 in 2006, reflecting a slight decrease in the budget of €300 compared with 2005, and an increase of €2 000, or 0.3% in 2007 over 2006. These changes represent minor adjustments in programme requirements.

Financial resources (2005 prices)

K.6	2005	2006	2007
Reg. budg.	794 100	793 800	795 800

Projects

Recurrent Project K.6.01: Reviewing and revising the international regulations for the safe transport of radioactive materials and associated guidance

Main outputs: Revised regulations, as necessary, consistent with the Basic Safety Standards, will be developed. Updated guidance on the application of radiological protection programmes in transport activities that is consistent with the Basic Safety Standard will be provided.

Ranking: 1

Recurrent Project K.6.02: Appraising compliance with the safety standards for the transport of radioactive materials

Main outputs: Transport Safety Appraisals (TranSAS) providing documented independent expert appraisal of Member States' implementation of the transport Regulations will be developed. Appraisals of Member State application of requirements for security in transport of radioactive material — assisting Member States in understanding areas for improvement in security in the transport of radioactive material will be conducted. Train-the-expert training course on transport safety — providing a cadre of experts for support of regional training courses will be organized.

Ranking: 1

Programme L. MANAGEMENT OF RADIOACTIVE WASTE

Rationale: Radioactive waste is an unavoidable remnant from the use of radioactive substances and nuclear technology. It has been produced by beneficial practices such as the generation of nuclear energy and the use of radioactive materials in medicine, research and industry, and from industrial activities using naturally occurring radioactive material, such as the mining and milling of naturally radioactive ores.

As with all radiation sources, radioactive waste is potentially hazardous to health and must therefore be managed in order to protect humans and their environment. A relatively small fraction of radioactive waste is routinely released into the environment in the form of discharges that need to be properly controlled; some amounts may remain in the human habitat as radioactive residues, particularly after the termination of practices and the decommissioning of installations, which may require restoration of the affected environments; finally, the main bulk of radioactive waste must be rendered into a solid form and safely stored or directly disposed of into repositories isolated from the human habitat. Thus radioactive waste management requires safety standards and provisions for their application, including the implementation of appropriate technologies.

As radioactive waste is a source of radiation exposure, the Agency's statutory radiation safety functions — i.e. establishing safety standards for the protection of health and providing for the application of these standards at the request of a State — are applicable. In addition, several international undertakings and agreements place obligations on the Agency related to the safety of radioactive waste management, namely the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention), the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Materials (the London Convention), the United Nations Conference on Environment and Development (UNCED or Rio Declaration), and the United Nations Global Plan of Action for Protection of the Marine Environment from Land-based Activities. Other regional undertakings apply to the control of radioactive wastes in the environment and also involve the Agency, for example, the Oslo and Paris Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention).

Since 2000, the Agency's activities in the area of storage and disposal of radioactive waste have been based on the Action Plan on radioactive waste management, which is derived from the findings of international conferences organized by the Agency on the subject, and which was subsequently approved by the Board of Governors for implementation. In addition, the Agency will continue to respond to both developed and developing Member States' interest in the adoption of a coordinated and cooperative approach for the management of radioactive waste.

The Action Plan on the decommissioning of nuclear sites and installations, which was based on the findings of an international conference held in 2002, and approved by the Board of Governors in 2004, continues to form the basis of the Agency's activities in the safe termination of nuclear activities.

Areas affected by radioactive residues exist in many parts of the world as a result of previous civil and military nuclear activities. The radiological conditions at the sites need to be assessed to determine the need for possible remediation.

The need to regulate naturally occurring radioactive material (NORM) in the environment is a matter of concern to Member States. The radiation exposure to the public from different industries that use or generate NORM can be significant and needs to be considered as part of the overall radiation protection regime.

Finally, in the framework of the recommendations of the Rio Conference on Environment and Sustainable Development (Agenda 21), the Agency has been entrusted with the task of developing indicators for radioactive waste management in the context of sustainable development. Concern about the state of the environment has led to pressure in some parts of the world for reductions in discharges of radionuclides to the environment. Another reflection of this concern is the movement towards elaborating existing radiation protection policies for the protection of the public to explicitly include the protection of non-human species. The radiological criteria against which doses to members of the public are assessed may change with the publication in 2005 of new ICRP recommendations, and new approaches to assess the impact of ionizing radiation on the environment (biota) are being developed. These changes are reflected in an Action Plan based on the findings of the international conference on the Protection of the Environment from the Effect of Ionizing Radiation, held in Stockholm in 2003, drafted in 2004 by stakeholders dialogue and to be submitted to the Board of Governors in 2005.

The beneficiaries of the programme are national bodies charged with radioactive waste management responsibilities. This includes in particular competent authorities for regulating and controlling the safety of radioactive waste management, organizations operating radioactive waste management facilities or facilities generating radioactive waste, environmental

protection agencies responsible for controlling the discharges of radioactive materials to the environment, and to some extent health authorities. Derived beneficiaries are members of the public and society at large.

Objective: To increase global harmonization in the policies, criteria, standards and provisions for their application, as well as in methods and technologies, for achieving safety in radioactive waste management, in order to protect humans and human habitats against potential health effects attributable to actual or potential exposure to radioactive waste.

Outcomes
— International consensus achieved on Agency radioactive waste safety standards.
— Use by Member States of radioactive waste management technologies and strategies as documented in Agency publications.
Performance Indicators
— Radioactive waste safety standards approved in accordance with relevant international action plans.
— Implementation of technical guidance provided in Agency documents by Member States.

Specific criteria for prioritization:

— First priority is given to establishing standards and servicing conventions.

— Second priority is given to application of standards and transfer of technology for radioactive waste management.

— Third priority is given to strengthening information exchange.

Subprogramme L.1. Development of Waste Safety Standards, Servicing the Joint Convention and Fostering Information and Communication Networks

Rationale: Establishing safety standards is a statutory function of the Agency; the waste safety standards are one set of these standards. The development of standards is carried out in each technical subprogramme, with the assistance of expert groups from Member States. However, in order to ensure the set of waste safety standards are coherent with each other and with the Agency's other standards, they are approved by international committees of national regulators established for the purpose and by the Commission on Safety Standards.

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management is the only legally binding instrument in the subject area. The Joint Convention process requires Contracting Parties to undergo self-assessment and, through the three yearly review meetings, a form of international peer review assessment.

Together the Joint Convention, the safety standards and the associated peer review processes form an international regime through which the safety of radioactive waste management is being continuously reviewed, assessed and upgraded.

As recognized during several international events, the Agency has an obligation to lead activities towards preserving and enhancing nuclear knowledge. The Scientific Forum held during the 46th General Conference led to a resolution calling on the Agency to increase the attention given to nuclear knowledge management activities. The priority activities defined by the Forum are to integrate existing nuclear data and information bases (in the Agency and in Member States) in the form of an easily accessible "Nuclear Knowledge Portal". To support these activities in the context of radioactive waste management, the Agency is improving, augmenting and integrating its systems to collect, manage and disseminate information related to radioactive waste management in Member States and international organizations.

There is a basic and longstanding issue in communicating effectively with the public in matters related to radioactive waste. The lack of understanding and concern about radioactive waste, which is widespread, needs to be addressed in order to improve the general awareness and comprehension of policy makers, opinion makers and professional bodies. As part of this subprogramme, the exchange of technical information and know-how will be facilitated through the organization of international conferences and the coordination of international initiatives.

Objectives:

— To improve the safety of waste management in Member States through the effective functioning of the Joint Convention, by establishing authoritative international safety standards and by supporting the enhancement of the regulatory infrastructure.

— To improve awareness and understanding of radioactive waste management issues among the Agency's constituencies by effectively gathering, disseminating and communicating relevant information.

Outcomes
— Effective functioning of the joint convention, with the safety standards being used as the recognized safety reference.
— Enhanced established information systems on radioactive waste management (improved collection/dissemination, broadened scope of information managed).
— Enhanced management of radioactive waste in Member States through the exchange of technical information and expertise.
Performance Indicators
— Number of countries ratifying the Joint Convention.
— Usage of Agency information systems (including documents accessed/downloaded, links followed). — Customer satisfaction with information system provided through survey/feedback mechanism.
— Input and output from Agency documents and data bases by Member States on the status of their national programme on radioactive waste management.

Programmatic changes and trends: This subprogramme merges the former Subprogrammes L.1 and L.2. A major component of the work will be the second Review Meeting for the Joint Convention in 2006.

Based on successful implementation of Agency systems, such as the Net Enabled Waste Management Database (NEWMDB), the scope of information collected by the Agency will be broadened to more fully document nationally based activities and to archive this information at the international level.

Increasingly, national decisions related to radioactive waste management are made involving the public. Attention will be paid to disseminate the information down to reach a broader audience, notably the public at large.

Resource changes and trends: The proposed resources for Subprogramme L.1 amount to €1 247 900 in 2006, reflecting an increase in the budget of €41 000, or 3.4% over 2005, with a decrease of €58 500, or 4.7% in 2007 compared with 2006. A higher budget level is necessary in 2006 for the Review Meeting on the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, to be held that year.

Financial resources (2005 prices)

L.1	2005	2006	2007
Reg. budg.	1 206 900	1 247 900	1 189 400

Projects

Recurrent Project L.1.01: Reviewing and approving waste safety standards

Main outputs: This project will result in biannual reports of the WASSC.

Ranking: 1

Recurrent Project L.1.02: Servicing the Joint Convention on the safety of spent fuel management and on the safety of radioactive waste management

Main outputs: Summary reports of the Review Meetings and of any other meetings of Contracting Parties will be issued. Summaries and records of information presented at the Review Meetings will be made available.

Ranking: 1

Recurrent Project L.1.03: Managing radioactive waste information systems

Main outputs: "Waste Management Research Abstracts" volumes 31 and 32 will be issued; "Radioactive Waste Management Status and Trends" volume 5 will be issued; the following activities related to NEWMDB data collection and dissemination will be carried out: (a) "Radioactive Waste Management Profiles" volumes 8 and 9 will be issued; (b) consolidated, international radioactive waste inventory reports number 5 and 6 will be issued; (c) results of "lessons learned" workshops on the NEWMDB will be posted on the NEWMDB web site; (d) workshop recommendations will be implemented (to the extent practicable); (e) NEWMDB Reading Room feature will be enhanced to a broader "radwaste management information portal" concept; statistics and user feedback will be posted in a publicly accessible NEWMDB "consultation room".

Ranking: 3

Recurrent Project L.1.04: Facilitating exchange of radioactive waste management information and know-how

Main outputs: A report of the international Waste Technology Advisory Committee (WATEC) will be provided to senior management. Contributions to major international meetings organized by or in cooperation with the Agency will be produced. Papers on Agency work presented at international conferences and symposia will be published.

Ranking: 2

Subprogramme L.2. Disposable Waste: Management of Radioactive Waste and Disused Sealed Sources

Rationale: The International Conference on Issues and Trends in Radioactive Waste Management, held in Vienna in December 2002, provided a timely update on the major issues in radioactive waste management, and introduced a few new issues. One of the most telling messages from the Conference was strong reinforcement of a trend identified at the Cordoba Conference in 2000, namely greater recognition of the importance of the social and political aspects of radioactive waste management.

Although progress has been made towards the implementation of repositories for spent fuel and high level waste at Yucca Mountain in the United States of America and in Finland, actual experience in geological disposal of such wastes does not exist. The Agency has been encouraged to place emphasis on activities in the area of geological disposal, based on the Action Plan on the safety of radioactive waste management approved by the Board, recommendations from advisory committees and findings of international conferences. The Action Plan enables the Agency to fulfil its statutory obligations in this field by establishing safety standards and defining safety approaches for geological disposal. In addition to safety driven activities, the main elements of the Action Plan are being implemented in this subprogramme.

In recent years, mainly because of the unavailability of permanent disposal facilities, stores originally intended as temporary facilities have had their lifetimes extended and serious consideration has been given, in some countries, to the use of storage as a long term management option. The Action Plan provides a focus on important safety- and technology-related activities to be accomplished in this field.

The implementation of international projects involving many Member States from both developed and developing countries demonstrates the increasing interest in the adoption of a coordinated and cooperative approach for the management of radioactive waste, in particular the development of multi-national or regional, shared repositories for the disposal of radioactive waste, including disused radioactive sources.

In light of the changes and challenges the world faces and the emphasis on the safety and security of nuclear material in general and on sealed radioactive sources in particular, their proper management takes an additional dimension. Recognizing the lack of proper facilities and the required expertise to manage such sources in many Member States, activities within this subprogramme call for the development of new ways to solve the problem in a reasonable time. This approach concentrates on i) the adaptation of technologies applicable to developing countries in reasonable time, ii) the upgrading of infrastructure in developing countries to safely manage sealed radioactive sources and iii) the direct assistance to Member States to eradicate the legacy of the past.

Objectives: To enhance Member States' capabilities in the radioactive waste management in order to facilitate implementation of safe and cost effective approaches and technologies for the predisposal and near surface disposal of radioactive waste and to build confidence in technologies and approaches developed for the geological disposal of high level waste.

Outcome
— Reinforcement of safety standards and technical documents in the pre-disposal and disposal of radioactive waste.
Performance Indicators
— Implementation of guidance provided in Agency documents by Member States. — Number of requests for appraisals on processing and disposal of both low and intermediate level waste and high level waste.

Programmatic changes and trends: This subprogramme merges projects previously carried out under separate safety and technology subprogrammes related to the disposal of radioactive waste. For the 2006–2007 cycle, emphasis will be placed on the regional application of a safe and secure management of disused sealed radioactive sources; cost effective disposal concept, safety assessment and licensing. All projects from the subprogramme will input into this application.

In the area of pre-disposal management of radioactive waste, there will be increased emphasis on the development and implementation of innovative and new advanced waste processing technologies, and on storage facilities for high level waste and spent fuel for extended periods up to 200–300 years.

In the area of the disposal of radioactive, approaches and technologies relevant to the upgrading of existing storage facilities for low and intermediate level waste to permanent disposal facilities will be developed. The concept of multi-national shared disposal facilities in countries with small inventories of radioactive waste, including disused radioactive sources, will also be developed.

Resource changes and trends: The proposed resources for the Subprogramme L.2 amount to €2 801 900 in 2006, reflecting a slight decrease in the budget of €1 500, or 0.1%, compared with 2005, with an increase of €7 800, or 0.3% in 2007 over 2006.

These changes represent minor adjustments in programme requirements.

Financial resources (2005 prices)

L.2	2005	2006	2007
Reg. budg.	2 803 400	2 801 900	2 809 700

Projects

Project L.2.01: Improving the safety of predisposal of radioactive waste

Main outputs: The Safety Requirements on predisposal management of radioactive waste to ensure a comprehensive coverage of all predisposal activities and facilities will be revised. Appraisals of national predisposal waste management activities will be conducted. A Safety Report on the safety of extended storage of radioactive waste will be developed.

Duration: 2006–2010

Ranking: 1

Project L.2.02: Developing a globally harmonized approach for the safe disposal of radioactive waste

Main outputs: Safety Guides on geological disposal and on safety assessment for radioactive waste disposal will be published. Safety Requirements on near surface disposal of radioactive waste will be revised. Safety Reports on borehole disposal and on a common framework for the management and disposal of radioactive waste will be developed. The outcome of the CRP 'Application of Safety Assessment Methodology to Near Surface Radioactive Waste Disposal Facilities' (ASAM) will be published. Appraisals of radioactive waste disposal facilities and/or activities will be undertaken.

Duration: 2006–2010

Ranking: 1

Project L.2.03: Transferring technologies for the predisposal of radioactive waste

Main outputs: The project activities will result mostly in technical documents and guidelines covering key issues in radioactive waste management, specifically in pre-disposal management, selected on the basis of the state of the art, the priorities set above and Member States requests. The documents started in the 2004–2005 biennium will be published during 2006–2007, while those to be started during this programme will have only drafts prepared, some of those "quasi" definitive. On waste minimization two new documents will start to be elaborated: a technical document related to organization and technical options and a technical report on thermal processes which will both be in advanced draft status at the end of the biennium. The same applies to a technical document on technical conditions of long term storage of high level waste that will undergo a second draft revision. Regarding other publications, two documents will be in their first drafting stage, one on key parameters for packages specification, and another one on international experience on the use of scaling factors, while it is expected that six more documents, started during 2004–2006, will be published during the biennium.

Duration: 2006–2010

Ranking: 2

Project L.2.04: Building confidence and transferring technologies for the disposal of radioactive waste

Main outputs: One of the important outputs of this project will be, through the implementation of the Network of Centres of Excellence, training in and demonstration of disposal technologies in underground research laboratories that will facilitate public acceptance of geological disposal concepts. The project will also result in TECDOCs on disposal approaches for long lived low and intermediate radioactive wastes; on scenarios of retrievability and related technical solutions; and on factors affecting public and political acceptance of geological disposal concepts.

The following TECDOCs will be issued: Disposal aspects of low and intermediate level decommissioning waste; Cost considerations and funding mechanisms for the disposal of low and intermediate level waste; and A web-based catalogue on operational experiences in near surface disposal. A regional training course on disposal of low and intermediate level waste will be organized.

Duration: 2006–2010

Ranking: 2

Project L.2.05: Management of disused sealed radioactive sources

Main outputs: The main output will be the conditioning of sealed sources and their safe and secure storage. In order for this to be accomplished, assistance will be provided to Member States and technical procedures for sealed radioactive sources management as well as computerized systems for record-keeping of waste inventories will be developed and implemented. On-the-job training for national radioactive waste management teams will be proposed and organized.

Duration: 2006–2008

Ranking: 2

Subprogramme L.3. Dischargeable Waste: Public and Environmental Protection

Rationale: The Agency has a long tradition of establishing safety standards related to the control, assessment and monitoring of discharges of radioactive substances to the environment. It was encouraged to continue and develop those standards to reflect current events in the field in an Action Plan based on the findings of the international conference on the Protection of the Environment from the Effect of Ionizing Radiation, held in Stockholm in 2003, drafted in 2004 by stakeholders dialogue and to be submitted to the Board of Governors in 2005.

Concern about the state of the environment has led to pressure in some parts of the world for reductions in discharges of radionuclides to the environment. Another reflection of this concern is the movement towards elaborating existing radiation protection policies for the protection of the public to explicitly include the protection of non-human species.

Changes in international policy in these areas will have to be taken into account in the relevant safety standards, namely for the control of discharges to the environment from nuclear facilities, for limiting long term releases from waste repositories and criteria for the remediation of areas previously contaminated with radioactive materials.

The public is frequently concerned about the possible presence of radionuclides in environmental materials and Member States need to have the capability to measure and assess the impact of radionuclides in environmental media such as food and drinking water.

Several international organizations are involved in the control of pollutants in the environment and, because of its recognized competence in this field, the Agency must interact with and advise such organizations in relation to radioactive materials in the environment.

Objective: To strengthen Member State ability to control discharges of radioactive materials to the environment and to assess their impact on the public and the environment.

Outcome
— International consensus on policies for the radiation protection of the public and the environment.
Performance Indicator
— Development of guidance on the radiation protection of the public and the environment in accordance with relevant international action plans.

Programmatic changes and trends: The radiological criteria against which doses to members of the public are assessed may change with the publication in 2005 of new ICRP recommendations, and new approaches to assess the impact of ionizing radiation on the environment (biota) are being developed.

Resource changes and trends: The proposed resources for Subprogramme L.3 amount to €708 600 in 2006, reflecting a decrease in the budget of €71 700, or 9.2%, compared with 2005, with an increase of €32 000, or 4.5% in 2007 over 2006. The decrease in 2006 results from a reduced allocation of resources to modelling environmental radionuclide transfer and doses to humans and non-human species. The increase in 2007 relates mainly to controlling the exposure from environmental radiation.

Financial resources (2005 prices)

L.3	2005	2006	2007
Reg. budg.	780 300	708 600	740 600

Projects

Project L.3.01: Controlling the exposure of humans and non-human species from environmental radiation

Main outputs: Safety Requirements for radioactive discharge control will be developed. A revised Safety Guide for radioactive discharge control will be developed. A Safety Report on methods of biota doses assessment based on best national experience and new developments will be prepared.

Duration: 2006–2010

Ranking: 1

Project L.3.02: Monitoring and maintaining an inventory of radioactive discharges to the environment

Main outputs: The Agency will further develop and maintain its database on radioactive discharges into the environment.

Duration: 2006–2010

Ranking: 1

Project L.3.03: Achieving international agreement on modelling environmental radionuclide transfer and doses to humans and non-human species

Main outputs: Reports on the results of the special project on environmental modelling for radiation safety (EMRAS) will be developed.

Duration: 2006–2010

Ranking: 2

Subprogramme L.4. Residual Waste: Decommissioning of Installations and Remediation of Sites

Rationale: Residual radioactive materials are being accumulated from a range of nuclear activities, including the decommissioning of nuclear sites and installations and from the environmental remediation of sites affected by previous nuclear activities. These areas, facilities and material must be managed in ways that remove potential sources of risk to the immediate human environment through safe and cost effective approaches.

Important safety and technology lessons will be learned as increasing numbers of facilities are decommissioned and sites remediated. Member States can gain from opportunities to share and exchange knowledge and experience. Many smaller research facilities such as research reactors and laboratories await decommissioning; many of these are in countries with inadequate infrastructures, insufficient funds and little expertise. International assistance should be marshalled to help ensure that the decommissioning of these facilities is accomplished safely and cost effectively. As experience is gained with the decommissioning of nuclear facilities, the decommissioning safety standards must be updated to reflect the safety lessons learned.

Areas affected by radioactive residues exist in many parts of the world as a result of previous civil and military nuclear activities. In many cases, access to the sites is prohibited because of concerns over potential risks to health from radiation. The radiological conditions at the sites need to be assessed to determine the need for continuing restrictions or for possible remediation and the removal of restrictions.

The residual radioactive materials that are being accumulated from a range of nuclear activities must be managed in ways that remove potential sources of risk to the immediate human environment through safe and cost effective approaches. In addition, the need to regulate and manage Naturally Occurring Radioactive Material (NORM) resulting from industrial practices is a matter of concern to Member States. The radiation exposure to the public from different industries that use or generate NORM can be significant and needs to be considered as part of the overall radiation protection regime.

With an Action Plan, based on the findings of an international conference in 2002 and approved by the Board of Governors in 2004, the Agency will implement its statutory obligations in this field by strengthening its positions related to safe decommissioning. The Action Plan also provides a focus on important activities to be accomplished in the field.

Objectives:

— To strengthen the safe decommissioning of nuclear facilities in Member States and the release or remediation of sites affected by radioactive residues.
— To achieve up-to-date information on methods and technologies for application in the fields of decommissioning, environmental remediation and disposition of resulting residual radioactive materials and to provide advice and assistance where appropriate.

Outcome
— Actions taken by Member States to assess the radiological conditions, decommission safely nuclear facilities and manage the cleanup of radioactively contaminated sites within their territory, in accordance with Agency recommendations.
Performance Indicators
— Number of Member States assisted by the Agency for decommissioning and site remediation projects. — Number of Member States using technologies and methods for decommissioning and cleanup recommended by the Agency.

Programmatic changes and trends: This subprogramme merges projects carried out under separate safety and technology subprogrammes related to residual waste. The Action Plan on the decommissioning of nuclear activities will be the major driving force of the subprogramme. The major focus will change from the development of safety standards to their implementation. In response to the growing need by Member States for assistance in efficient management of nuclear liabilities, increased emphasis will be placed in moving away from a merely "technology-driven" approach towards a more integrated, life-cycle management.

The increased interest in the regulation of NORM will cause the new area of interest to be developed. This activity will fill a gap in the Agency's safety standards.

The shift of implementation of remediation planning and programme will improve Members States' control of contaminated sites. The emphasis on evolution and decision making will allow prioritization of sites and better allocation of resources.

Resource changes and trends: The proposed resources for Subprogramme L.4 amount to €1 164 000 in 2006, reflecting an increase in the budget of €32 200, or 2.8% compared with 2005, and a further increase of €18 700, or 1.6% in 2007 over 2006. The increases are due to further emphasis on regulating and remediating environments with

residues from naturally occurring radioactive material.

Financial resources (2005 prices)

L.4	2005	2006	2007
Reg. budg.	1 131 800	1 164 000	1 182 700

Projects

Project L.4.01: Developing and implementing guidance on the safe termination of nuclear activities

Main outputs: The Safety Guides on decommissioning will be updated to reflect the new Safety Requirements. A Safety Report on compliance monitoring after decommissioning will be published. The Agency will continue to provide assistance to Member States on decommissioning of nuclear facilities, particularly in the form of international coordination meetings, education programmes, a web based forum for information exchange and peer reviews of safety related decommissioning documents. The proceedings of the international conference on lessons learned during the planning and implementation of decommissioning will be published.

Duration: 2006–2010

Ranking: 1

Project L.4.02: Regulating and remediating environments with residues from naturally occurring radioactive material (NORM)

Main outputs: A Safety Guide on the safe management of NORM in the environment will be developed. A training programme on the safe management of NORM will be prepared and provided to Member States upon their request.

Duration: 2006–2010

Ranking: 1

Project L.4.03: Developing and implementing guidance for the remediation of environments affected by radioactive residues from past activities and events

Main outputs: Safety reports will be developed on: the standard format and content of a remediation plan for contaminated sites; a methodology for the monitoring to ensure compliance with remediation criteria; and issues for consideration during the planning for site remediation, including mining and milling areas.

Duration: 2006–2010

Ranking: 2

Project L.4.04: Facilitating the transfer of sustainable technologies for decommissioning of facilities

Main outputs: A conference on lessons learned from decommissioning projects will be held in 2006 and the proceedings published shortly after. No other documents or reports will be completed within the 2006–2007 cycle but several will be close to publication and quasi-final drafts will be available in 2007. These include: a technical report on long term preservation of information in deferred decommissioning projects; a document collecting information on stakeholders' involvement in decommissioning projects with a focus on countries with limited resources; a document collecting information on societal issues in decommissioning; and a document collecting experience in funding provisions for decommissioning with a focus on countries with limited resources.

Duration: 2006–2009

Ranking: 2

Project L.4.05: Promoting technologies for remediation of contaminated sites

Main outputs: The mainstay of outputs will remain classical forms of knowledge collection and distribution, namely technical reports and technical documents. As the Directory of Radioactively Contaminated Sites (DRCS) becomes populated with actual site data and is further developed into a clearinghouse for information on related topics, it is expected that this Web-based tool becomes more important to deliver the outputs. A new mode of disseminating information and practical guidance is being initiated by establishing a network of centres of excellence in environmental remediation (NCEER). Outreach to stakeholders is to be increased by producing a brochure on environmental remediation related matters.

Duration: 2006–2010

Ranking: 2

Programme M. NUCLEAR SECURITY

Rationale: International terrorism and multinational crime is ever present. It is showing a wider international scope, organization and evidence of long term planning. Efforts must continue to ensure that nuclear and radioactive materials cannot be exploited by sub-State actors, e.g. terrorists or criminals. This requires a global approach to ensure that comprehensive infrastructures and capabilities are in place to prevent, detect and respond to any terrorist or malicious act. The demands on the Agency's nuclear security programme have increased each year since 2001; they are expected to continue to grow.

In response to requests by the General Conference and the Board of Governors, and in line with its statutory mandate, the Agency's nuclear security programme provides assistance to Member States in their efforts to establish the necessary infrastructure to protect nuclear and other radioactive materials against malicious acts such as illegal possession, use, transfer and trafficking, and to protect nuclear installations and transport against sabotage. The programme also seeks to assist Member States in their efforts to detect and respond to such activities should they occur. The programme provides a focal point for collection and exchange of nuclear security information and its use to target assistance and assess needs for improvements in the nuclear security systems in Member States. The programme will promote, as appropriate, the implementation of a security culture, including aspects of public outreach.

In March 2002, the Board of Governors approved a plan of action for activities in the area of nuclear security (GOV/2002/10). The plan brought together existing Agency activities directed at enhancing nuclear security and used these as the basis for recommending further enhanced and more comprehensive work. The plan was based on an evaluation of the potential threat from malicious acts involving nuclear materials and other radioactive materials, in use, storage or transport. This threat ranges from the theft of nuclear material for weapons purposes to dispersion of radioactive (including nuclear) material to cause radiological damage to persons, property or the environment. The threat may include the use of a radiological dispersion device (RDD, a so called "dirty bomb") or as a result of an act of sabotage at a nuclear facility or transport. In some countries radioactive sources have been abandoned, or otherwise fallen out of regulatory control; they are referred to as being "orphaned". These sources may, if found by terrorists, be used in RDDs. The planned activities include measures for prevention, detection and response, moving sensitive materials, for example radioactive sources to safe and secure locations, as well as engineering measures as part of the physical protection of nuclear installations. In combination, these activities aim to provide a comprehensive approach to nuclear security.

A follow-on to the three-year plan established in 2002 will be developed for approval by the Board of Governors in 2005. The implementation of the programme will build on the achievements of the programme implemented in 2001–2005, and will focus, inter alia, on the urgently needed implementation of the many recommendations for improvements that have resulted from the nuclear security service missions performed.

The overall goal of the programme is that the Agency will act as the authoritative international centre for the development of nuclear security guidelines and for the support of their implementation, including the provision of expert advice, training, technical measures, advisory service missions and other assistance for the benefit of Member States. The Agency will seek to foster collaboration and cooperation, and information exchange with international bodies concerned with responsibilities in areas related to nuclear security. It will provide a systematic, comprehensive approach to enhancing nuclear security.

Objective: To improve worldwide security of nuclear material, other radioactive materials and their associated nuclear facilities, in use, locations and transports, through support and assistance to Member States for the establishment of effective national nuclear security regimes.

Outcomes
— Establishment and application of an internationally acceptable framework for nuclear security.
— Improved capability of Member States to detect and respond to malicious acts involving nuclear material, other radioactive material, nuclear facilities, locations or nuclear transports.
— Comprehensive and coherent approach to nuclear security reducing the overall risk that malicious acts against nuclear and other radioactive materials in nuclear facilities and transports can cause radiological harm to the public, environment or property.
Performance Indicators
— Number of Member States implementing recommendations made, inter alia, through the Agency's Nuclear Security Advisory Service.

Performance Indicators (cont'd.)
— Number of States implementing Agency developed nuclear security related guides and recommendations.
— Number of Member States implementing procedures to detect and respond to malicious acts involving nuclear and other radioactive materials in use, storage and transport.
— Number of Member States that implement nuclear security for activities with nuclear and other radioactive materials in a comprehensive and coherent way.

Specific criteria for prioritization:

— First priority will be given to activities to provide for the establishment of improved security In Member States, including to develop an international nuclear security framework;

— Second priority will be given to activities that relate to research and development that contribute to improving nuclear security methodologies;

— Third priority will be given to the coordination of Agency programme activities with international organizations that have related responsibilities

Subprogramme M.1. Assessing Nuclear Security Needs, Threat Analysis and Coordination

Rationale: Effective implementation of the Agency's activities on improving and enhancing nuclear security requires optimal mechanisms for coordination, including prioritizing, planning monitoring and reporting. The Agency's interaction with Member States is the foundation for its nuclear security activities, and coordination of its activities with bilateral nuclear support programmes is necessary to ensure effective delivery of services and efficient use of resources. Coordination with other international organizations is required to increase the effective utilization of resources and expertise and to avoid duplication of efforts.

Information is key to understanding and combating potential threats that might involve nuclear and other radioactive materials and their associated facilities. Compilation of information to conduct the necessary analysis requires exploitation of information from all available sources. This will include continued and enhanced interaction with Member States and other international organizations. Within this effort, the Illicit Trafficking Database will provide a tool for collecting information to be evaluated for inclusion in threat analysis.

Threat analysis will help determine priorities for assistance to Member States, including determining the need for additional or improved guidelines and expert services, as well as for training and further evaluations. Additionally, it will also enable the Agency to better define the strategic mission of its nuclear security programme. Based on results of Agency nuclear security service missions and on other available information, an Integrated Nuclear Security Support Plan (INSSP) is prepared for any individual Member State requesting Agency assistance. The INSSP delineates the actions to be implemented to improve nuclear security and assist in setting priorities.

Recurring incidents of illicit trafficking in nuclear and other radioactive materials and in sensitive equipment remain a concern. The Agency maintains the Illicit Trafficking Database, to which Member States contribute information on a voluntary basis. Compilation, evaluation and analysis of information about seizures, theft and other malicious acts involving nuclear and other radioactive materials provides support for directing and prioritizing nuclear security activities. Credible risks of acts of nuclear terrorism, as well as progress in implementing measures to improve the protection against nuclear terrorism and other criminal acts must be better understood and communicated as appropriate to Member States and the general public.

Nuclear security activities cut across Major Programmes 1–5 and 7 and activities delivered through the technical cooperation programme. The subprogramme includes development and implementation of effective processes necessary for internal coordination.

Objectives:

— To underpin and ensure effective, coordinated implementation of the entire programme and, to the maximum extent possible, effective coordination and cooperation with support programmes implemented by Member States.

— To ensure, to the maximum extent possible, effective coordination with other international organizations.

— To have an effective and comprehensive nuclear security information database, including illicit trafficking, theft and other illegal activities involving the use of nuclear and other radioactive materials, non-nuclear materials and sensitive equipment in nuclear facilities and transports.

— To enhance the capability for analysis and assessment of information relevant to current nuclear security issues.

Outcomes
— A coordinated nuclear security programme which effectively meets the requirements of the Member States and donors.
— Improvements of exchange of reliable and relevant information with Member States and other international organizations, including joint activities, focusing on efficient use of resources.
Performance Indicators
— Coherent and transparent implementation of nuclear security activities.
— Number of collaborating partners in the Agency and in other organizations and the level of their participation. — Quantity and quality of information and data related to nuclear security provided to the Secretariat, Member States and other organizations.

Programmatic changes and trends: With significantly increased attention to, and resources available for, activities related to nuclear security and considering the complex matrix of activities, which contribute to a comprehensive approach to nuclear security, there has been a sharp increase in the need for information relevant to nuclear security. The need for effective internal and, in particular, external coordination is enhanced due to the need for resources optimization. The demands have increased on effective use of available information for threat assessment and in support of planning and implementing nuclear security activities in States. There is a continued increase in the requests for updated and complete information on illicit trafficking, theft and threats of acts in which nuclear material and other radioactive material in nuclear facilities and transports would be used for malicious purposes. The need to provide added value by analysing the information is increasing accordingly. Based on, inter alia, results of the various nuclear security services that the Agency has offered during the past years, the urgent need to implement actions that would provide for improved security has become evident. The Integrated Nuclear Security Support Plans developed for this purpose and to provide a tool for increased coordination and cooperation with Member States that have bilateral support programmes, will be an important feature of the programme. Comprehensive nuclear security information is fundamental in targeting activities to be included in the Integrated Nuclear Security Support Plans and in obtaining the goals of the programme. Updating and maintaining the Illicit Trafficking Database will be performed in Project N.2.02, IT Application Support.

Resource changes and trends: The proposed resources for Subprogramme M.1 amount to €369 600 in 2006, reflecting an increase in the budget of €63 400, or 20.7% compared with 2005, with no change in 2007 compared to 2006. These funds will provide a core staffing for the subprogramme and for managing the voluntary contributions to the Nuclear Security Fund for programme implementation.

Financial resources (2005 prices)

M.1	2005	2006	2007
Reg. budg.	306 200	369 600	369 600

Projects

Recurrent Project M.1.01: Assessing nuclear security priorities and analysing threats

Main outputs: The project will result in an up-to-date data bank on thefts, seizures and other malicious acts such as thefts and sabotages involving or threatening to involve nuclear and other radioactive materials, in use, storage or transport, as well as sensitive nuclear equipment; acts or threatened acts to construct or use nuclear and/or other radioactive materials (e.g. a radiation source) for the construction of a nuclear or a radiological dispersion device; periodic reports with analysis of cases, trends and materials involved in illicit trafficking and other malicious acts involving nuclear and other radioactive materials; a web page on nuclear security, with information of statistics and trends in illicit trafficking and of selected cases; timely responses to questions asked by media or by the general public. The project will also contribute to the Integrated Nuclear Security Support Plans for individual Member States.

Ranking: 1

Recurrent Project M.1.02: Harmonizing coordinated nuclear security activities with Member States

Main outputs: The project will result in nuclear security support and cooperation arrangements between the Agency and individual Member States; the Nuclear Security Support Plans will provide for improved coordination between activities performed by the Agency and through bilateral nuclear security support. The project will also result in reports on the implementation of the nuclear security programme, including the specific reports required for countries providing financial contributions to the Nuclear Security Fund.

Ranking: 1

Project M.1.03: Providing consistency and coherence of nuclear security activities and programmes

Main outputs: The project will result in cooperative arrangements which reflect the increased level of interaction with other international organizations. The project will also result in joint technical and

implementation reports on common topics and joint activities, which will improve the outreach of the Agency's programme.

Duration: 2006–2008

Ranking: 1 and 3

Subprogramme M.2. Preventing Malicious Activities Involving Nuclear and Radioactive Materials and their Associated Facilities

Rationale: An essential element in the first line of defence to prevent possible terrorist or other criminal acts is to establish effective security arrangements such as physical protection of nuclear materials and their associated facilities when in use, storage and transport. Likewise security, such as accurate accounting of other radioactive materials, including radiation sources and radioactive waste, requires protection against malicious, criminal or terrorist access, when such materials are in use, storage or transfer. States and international organizations must continue to address these concerns at both the national and the international levels in support of a comprehensive international nuclear security regime and its maintenance. The Agency has a central role in promoting and implementing activities that will improve the ability of States to prevent malicious activities involving nuclear and other radioactive materials and their associated facilities from occurring.

Efforts to strengthen the international physical protection regime will continue. Strengthening the Convention on the Physical Protection of Nuclear Material (CPPNM) will make a very significant step forward towards enhancing the physical protection of nuclear materials and nuclear facilities. The CPPNM provides an international platform for measures to prevent nuclear material becoming subject to sub-national criminal or terrorist activities aiming to use nuclear material in the construction of a nuclear explosive device. The CPPNM also endeavours to ensure that nuclear materials and facilities cannot be used in acts of sabotage aimed at dispersing radioactivity and causing destruction of people, property or the environment. The broadened scope of a revised CPPNM, with an obligation to provide physical protection of nuclear material in domestic use, storage and transport as well as in international nuclear transport, will initiate a much increased demand on the Agency to help States with the implementation of the new provisions of the CPPNM.

Broad implementation of the Code of Conduct on the Safety and Security of Radiation Sources will provide incentives for strengthening physical protection of radiation sources (i.e. "other" radioactive materials, such as sealed sources and radioactive waste) from malicious acts. Appropriate and effective accounting for nuclear materials, as well as of other radioactive materials, is a fundamental part of adequate security arrangements for such materials. It will be the basis for physical protection, for the early detection of theft and for domestic as well as international export and import control measures. A comprehensive and coherent set of recommendations and guidelines is required for effective implementation of the CPPNM and of the Code of Conduct.

Improvement of physical protection of nuclear and other radioactive materials in use, storage and transport and of vital areas of nuclear installations, requires dedicated support both through the Agency's programmes and through bilateral nuclear security support. Recommendations for sound improvements that are identified through Agency nuclear security services must be implemented. A modular approach to the Agency's nuclear security services will deliver services tailored to the wishes of the individual Member State. The Integrated Nuclear Security Support Plan will include the implementation of relevant recommendations for nuclear security improvements. A strengthened implementation of these plans, in full coordination with bilateral support programmes, will ensure improved prevention against malicious acts involving nuclear and other radioactive materials. These measures will be supported by work to encourage complementary efforts amongst international bodies aimed at preventing malicious activities involving nuclear and radioactive materials and their associated facilities.

Objective: To improve Member State capabilities to prevent theft, sabotage, unauthorized access, illegal transfer or other malicious acts involving nuclear or other radioactive material in use, storage or transport.

Outcomes
— Strengthened physical protection of nuclear and other radioactive materials in use, storage and transport.
— Internationally accepted nuclear security framework with guidelines and recommendations for physical protection and related accountability of nuclear and other radioactive materials, in use, storage and transport.
— Improved physical protection of nuclear installations and the effective use of engineering measures for this purpose.

Performance Indicators
— Demonstrated improvement in physical protection and other security arrangements for nuclear and other radioactive materials in use, storage and transport, inter alia, through implementation of INSSPs.
— Number of internationally accepted documents published in the Agency's nuclear security series of documents.
— Number of facilities that have implemented improved physical protection through Agency coordination and support.

Programmatic changes and trends: The requests by Member States for Agency nuclear security services is steadily growing and so are the requests for assistance with the implementation of the recommendations made during these services. Integrated Nuclear Security Support Plans, including measures to prevent, detect and respond to malicious acts involving nuclear and other radioactive materials, in use, storage and transport, will provide a platform for cooperation with and support to Member States for improved nuclear security. The awareness has also grown significantly that a comprehensive set of nuclear security guidelines and recommendations are needed as a platform for work both within Member States and by the Agency. Such guidelines and recommendations provide the baseline for the Agency's nuclear security services and for implementation of recommendations made through such service missions in Member States.

Resource changes and trends: The proposed resources for Subprogramme M.2 amount to €745 100 in 2006, reflecting an increase in the budget of €97 500, or 15.1% compared with 2005, with no change in 2007 compared with 2006. These funds will provide a core staffing for the implementation of the subprogramme.

Financial resources (2005 prices)

M.2	2005	2006	2007
Reg. budg.	647 600	745 100	745 100

Projects

Project M.2.01: Developing guidelines and recommendations for enhanced nuclear security

Main outputs: The project will result in new and revised guidance documents on physical protection, accurate accounting and other security arrangements for nuclear material and other radioactive materials in use, storage and transport, including a 5th edition of INFCIRC/225. The outputs will also include guidelines for the protection of nuclear power plants and their vital areas, research installations with, inter alia, research reactors, laboratories and waste management areas, and nuclear fuel cycle facilities; and specific guidance for the protection of radioactive materials in non-nuclear applications and for materials in installations with a mix of different activities, nuclear and non-nuclear. Specific guidance will be provided for the nuclear security of radioactive materials in waste storage and in depositories. The project will also result in improved methodologies for: developing a general design basis threat applicable for both nuclear material and for other radioactive materials; implementing a security culture and a graded approach to nuclear security of different materials and applications; implementing the defence in depth concept and addressing the protection of sabotage of nuclear and other radioactive materials in use, storage and transport.

Duration: 2006–2008

Ranking: 1 and 2

Project M.2.02: Supporting implementation of the nuclear security framework to prevent malicious acts

Main outputs: The project will result in improved technical and administrative systems for protection and accountability of nuclear material and other radioactive materials as a result of support provided by the Agency, and through bilateral programmes. Integrated nuclear security support plans for individual countries will be the basis for the support and serve as a tool to facilitate the provision of bilateral support to implement a nuclear security service recommendation. The project will also result in a comprehensive programme for nuclear security training, including for physical protection and material accountability, as needed for security purposes. Up to 20 training events are planned on an annual basis, in an international, regional or national setting including "train-the-trainers" events.

Duration: 2006–2008

Ranking: 1

Recurrent Project M.2.03: Providing nuclear security services for prevention of malicious acts

Main outputs: The project will result in the availability of modular nuclear security services that are available to States. The modular approach will promote flexibility and the service missions will be composed to meet the Member State needs. Nuclear security services will be performed with teams of Member States experts, composed as is required with regard to the topics to be addressed. Up to a total of twelve missions may be performed annually. The resulting recommendations will be included, as appropriate, in Integrated Nuclear Security Support Plans. The project will also make available, for individual States, up to six design basis threat (DBT) workshops. The documented results of the nuclear

security services, including of DBT workshops, will be kept at the highest level of confidentiality.

Ranking: 1

Subprogramme M.3. Detecting and Responding to Malicious Activities Involving Nuclear and Other Radioactive Materials

Rationale: The potential for nuclear proliferation or for the construction of a radioactive dispersal device (RDD) from nuclear or radioactive materials obtained unlawfully by sub-State actors, individuals or terrorists is a matter for international concern. Thus, Member States must have the best achievable capacity to detect and respond to the theft, the threat of theft, or fraudulent possession, transfer, including illicit trafficking, as well as dispersal and disposal of nuclear and other radioactive material and of sensitive nuclear equipment and technology for the production of these materials. Detection of such acts is an essential part of nuclear security systems, should preventive measures fail. Continued reports of nuclear trafficking incidents indicate a need to strengthen Member States' capability to combat illicit trafficking in nuclear and other radioactive material. Improved coordination amongst organizations involved both within Member States and in the international community is required, as is further development of the technology to make available user-friendly instruments for detection.

Staff in national organizations, including law enforcement organizations, need to be well trained to understand the problems, to use detection instruments and to know how to respond to malicious acts. Member States request international assistance to help them assess existing detection systems and techniques and to obtain support to improve them. Establishing effective nuclear security cultures in Member States will positively contribute to these efforts. These elements to build capacity for detection will be included in the Member State specific Integrated Nuclear Security Support Plans.

Currently there are insufficient internationally accepted guidelines and recommendations available to Member States for detecting and responding to unlawful activities in this regard. In addition there is no existing Agency service to assist States in assessing their detection and response capabilities. The guidelines and recommendations will be established to provide a sound basis for enhanced capability in Member States to detect and respond to malicious acts involving nuclear and other radioactive materials. They will also provide the basis for Agency services to Member States in detection and response. The Agency will support their implementation through actions included in integrated nuclear security support plans.

Objectives: To enhance the level of security in Member States through improving the capabilities to detect, interdict and respond to, including investigation of, intentional or reckless acts involving nuclear and other radioactive material and associated facilities, including theft, unauthorized possession, use, transfer, dispersal and disposal of such material, and sabotage of these facilities of threats thereof.

Outcomes
— Increased capability to detect malicious activities involving nuclear and other radioactive materials.
— Improved State capability to respond to malicious acts involving nuclear and other radioactive materials in use, storage and transport.
Performance Indicators
— Number of countries in which border monitoring is implemented and new procedures are in place as a result of Agency assistance.
— Number of countries implementing procedures to respond to malicious acts involving nuclear and other radioactive materials.

Programmatic changes and trends: The Agency is increasingly asked to assist in strengthening Member States' detection and response systems to potential terrorist or other criminal use of nuclear and other radioactive material. There will be a continued focus on the development of guidance for these measures as well as a strong emphasis on assisting States in their implementation of such internationally accepted guidance. The promotion of development of technology and instruments for border monitoring will be done in synergy with work performed in project N.2.01 (Instrument development and field support).

Resource changes and trends: The proposed resources for Subprogramme M.3 amount to €221 300 in 2006, reflecting a decrease in the budget of €129 700, or 37% compared with 2005, with no change in 2007 compared with 2006. These funds will provide a core staffing for the implementation of the subprogramme.

Financial resources (2005 prices)

M.3	2005	2006	2007
Reg. budg.	351 000	221 300	221 300

Projects

Project M.3.01: Developing guidelines and recommendations for detection and response to malicious acts

Main outputs: The project will result in a set of guidelines and recommendations for detection and response to malicious acts involving nuclear and other radioactive materials. The project will also

result in improved technology and methodology for detection and subsequently in the availability of effective, user-friendly instruments.

Duration: 2003–2008

Ranking: 1 and 2

Project M.3.02: Providing nuclear security services for detection and response to malicious acts

Main outputs: The project will result in the availability of modules for detection and response to malicious acts as part of the Agency's nuclear security services. Teams of Member State experts will evaluate present systems and make recommendations for improvements or upgrades, as required, or provide statements of good practices, as relevant. These recommendations will, together with other available information, provide input to the Integrated Nuclear Security Support Plans for the individual State. Up to twelve missions may be performed annually, as integrated nuclear security service missions, or as stand-alone missions, as requested by the Member State. The documented results of the mission will be protected at the highest level of confidentiality.

Duration: 2003–2008

Ranking: 1

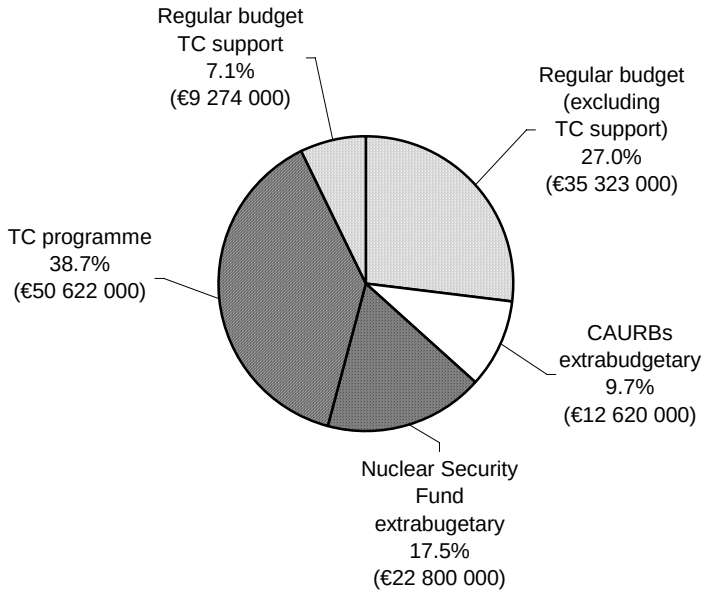
Project M.3.03: Supporting implementation of the nuclear security framework for detection and response to malicious acts

Main outputs: The project will result in improved capabilities in Member States to detect and respond to malicious acts involving nuclear and other radioactive materials, non-nuclear material and sensitive equipment that may be used for the production of such materials. The support provided will be part of integrated nuclear security support plans, as developed with input from, inter alia, recommendations from nuclear security service missions. Detection instruments will be available and tested for functionality and measures will be taken to provide for sustainability of the equipment. Analytical capability will be provided to Member States in all regions for support in nuclear forensics analysis, as required for seized material. The project will generate a comprehensive training programme for responsible national authorities and law enforcement staff; a set of training curricula for international, regional and national audiences will be developed and a total of about 25 training events will be offered. The evaluation of the effectiveness of the training programme will be conducted.

Duration: 2003–2008

Ranking: 1

Total Resources for Nuclear Safety and Security in 2006–2007 (including the TC programme)



	2006	2007	Total for biennium
Regular budget (excluding TC support)	17 635 000	17 688 000	35 323 000
Regular budget TC support	4 637 000	4 637 000	9 274 000
Subtotal regular budget:	22 272 000	22 325 000	44 597 000
CAURBs extrabudgetary	6 310 000	6 310 000	12 620 000
Nuclear Security Fund extrabudgetary	11 400 000	11 400 000	22 800 000
Funds from UN organizations	-	-	-
TC programme	25 256 000	25 366 000	50 622 000
TOTAL	65 238 000	65 401 000	130 639 000

The total resources for implementing Major Programme 3, which are illustrated (at 2006 prices) in the table and chart above, amount to €130 639 000 for the biennium. Regular budget resources constitute €44 597 000 or 34.1% of this amount. The regular budget for 2006 (at 2005 prices) shows an increase of €149 000 compared with the adjusted budget for 2005 and a further increase of €47 000 in 2007 compared with 2006. These increases are in line with the 'Package Proposal'.

An amount of €9 274 000 of regular budget funding, or 7.1% of total resources, will be used to support technical cooperation programming worth €50 622 000 either through scientific and technical support during the formulation and implementation of projects, or as an actual contribution to the programme itself through the provision of expert services.

Extrabudgetary funding expected for the biennium accounts for a further €12 620 000 or 9.7% of total resources, all of which relates to the funding of CAURBs. An amount of €22.8 million is expected to be available in extrabudgetary resources for the implementation of the plan of activities to protect against nuclear terrorism. There is a further €1 766 000 for CAURBs (listed in Table 16) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 14 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 3 - Nuclear Safety and Security

Summary of Regular Budget Resources for the Biennium

Table 15

	Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
3.	Overall management, coordination and common activities	926 400	8 000	0.9	934 400	5 000	0.5	939 400	1.3	946 600	951 800
	Total	926 400	8 000	0.9	934 400	5 000	0.5	939 400	1.3	946 600	951 800
X.1	Incident and Emergency Preparedness and Response	847 400	57 300	6.8	904 700	28 500	3.2	933 200	1.0	913 700	943 100
Programme X - Incident and Emergency Preparedness and Response		847 400	57 300	6.8	904 700	28 500	3.2	933 200	1.0	913 700	943 100
J.1	National Regulatory Infrastructure for Nuclear Installation Safety	1 182 800	(73 100)	(6.2)	1 109 700	(40 000)	(3.6)	1 069 700	0.9	1 119 400	1 078 100
J.2	Global Infrastructure and Information and Communication Networks for Nuclear Installation Safety	1 428 100	211 500	14.8	1 639 600	61 000	3.7	1 700 600	0.7	1 651 300	1 715 100
J.3	Development and Use of Advanced Tools for Safety Assessment	1 284 700	(157 000)	(12.2)	1 127 700	(15 200)	(1.3)	1 112 500	0.9	1 138 300	1 122 900
J.4	Design Safety and Site Evaluation	1 238 300	155 700	12.6	1 394 000	(8 100)	(0.6)	1 385 900	1.1	1 408 700	1 400 200
J.5	Operational Safety	1 587 200	400	-	1 587 600	(7 300)	(0.5)	1 580 300	0.8	1 600 700	1 593 100
J.6	Safety of Research Reactors and Fuel Cycle Facilities	1 235 500	(100 000)	(8.1)	1 135 500	31 100	2.7	1 166 600	1.1	1 147 600	1 179 900
Programme J - Safety of Nuclear Installations		7 956 600	37 500	0.5	7 994 100	21 500	0.3	8 015 600	0.9	8 066 000	8 089 300
K.1	Radiation Safety Standards	773 000	(4 400)	(0.6)	768 600	2 000	0.3	770 600	0.9	775 900	778 200
K.2	Radiation Safety Infrastructures	1 200 900	(77 000)	(6.4)	1 123 900	(14 000)	(1.2)	1 109 900	0.8	1 132 600	1 118 400
K.3	Occupational Radiation Protection	830 600	1 600	0.2	832 200	(6 000)	(0.7)	826 200	1.3	843 300	836 800
K.4	Radiological Protection of Patients	531 700	(4 800)	(0.9)	526 900	18 000	3.4	544 900	1.1	532 600	551 900
K.5	Control of Radiation Sources	810 100	99 900	12.3	910 000	(10 000)	(1.1)	900 000	1.3	922 200	911 600
K.6	Safety of the Transport of Radioactive Material	794 100	(300)	-	793 800	2 000	0.3	795 800	0.9	801 300	803 400
Programme K - Radiation and Transport Safety		4 940 400	15 000	0.3	4 955 400	(8 000)	(0.2)	4 947 400	1.1	5 007 900	5 000 300
L.1	Development of Waste Safety Standards, Servicing the Joint Convention and Fostering Information and Communication Networks	1 206 900	41 000	3.4	1 247 900	(58 500)	(4.7)	1 189 400	0.7	1 257 100	1 198 300
L.2	Disposable Waste: Management of Radioactive Waste and Disused Sealed Sources	2 803 400	(1 500)	(0.1)	2 801 900	7 800	0.3	2 809 700	1.4	2 840 200	2 848 200
L.3	Dischargeable Waste: Public and Environmental Protection	780 300	(71 700)	(9.2)	708 600	32 000	4.5	740 600	1.1	716 100	749 600
L.4	Residual Waste: Decommissioning of Installations and Remediation of Sites	1 131 800	32 200	2.8	1 164 000	18 700	1.6	1 182 700	1.4	1 180 000	1 200 000
Programme L - Management of Radioactive Waste		5 922 400	-	-	5 922 400	-	-	5 922 400	1.2	5 993 400	5 996 100
M.1	Assessing Nuclear Security Needs, Threat Analysis and Coordination	306 200	63 400	20.7	369 600	-	-	369 600	1.3	374 400	374 400
M.2	Preventing Malicious Activities Involving Nuclear and Radioactive Materials and their Associated Facilities	647 600	97 500	15.1	745 100	-	-	745 100	0.4	747 800	747 800
M.3	Detecting and Responding to Malicious Activities Involving Nuclear and Other Radioactive Materials	351 000	(129 700)	(37.0)	221 300	-	-	221 300	0.4	222 200	222 200
Programme M - Nuclear Security		1 304 800	31 200	2.4	1 336 000	-	-	1 336 000	0.6	1 344 400	1 344 400
Major Programme 3 - Nuclear Safety and Security		21 898 000	149 000	0.7	22 047 000	47 000	0.2	22 094 000	1.0	22 272 000	22 325 000

Major Programme 3 - Nuclear Safety and Security

Core Activities Unfunded in the Regular Budget
Table 16

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
3.	Overall management, coordination and common activities			
	3./19	*Organize a workshop on application of effective management systems in nuclear installations and activities (in conjunction with A.2.01/6)*	7 000	24 000
Subtotal 3.: Overall management, coordination and common activities			7 000	24 000
X.1.02	Operating and enhancing the Secretariat's incident and emergency centre			
	X.1.02/6	*Further develop networks of expertise (including those for sharing knowledge, and ERNET) for providing real-time advice and assistance during incidents and actual/potential emergencies*	100 000	100 000
	X.1.02/7	*Maintain and enhance according to feedback from contact points the ENAC protected website for information exchange*	70 000	20 000
	X.1.02/8	*Establish, release and maintain a single portal and compatible arrangements for reporting incidents and emergencies*	80 000	30 000
X.1.03	Strengthening intergovernmental and interagency arrangements			
	X.1.03/1	*Support the implementation of the action plan on enhancing international preparedness and response system*	100 000	100 000
	Subprogramme X.1: Incident and Emergency Preparedness and Response		350 000	250 000
Programme X - Incident and Emergency Preparedness and Response			350 000	250 000
K.1.03	Radiological protection in emergency intervention situations			
	K.1.03/4	*Develop generic practical guidance and tools for responding to research reactor and fuel cycle incidents and emergencies ensuring compatibility with accident management guidance*	20 000	20 000
	K.1.03/5	*Develop practical guidance on selection of field instrumentation*	20 000	20 000
	K.1.03/6	*Calculate dosimetric factors and D-values for response for all radionuclides of interest*	20 000	20 000
	K.1.03/9	*Provide emergency preparedness reviews (EPREV) (two per year)*	30 000	30 000
	K.1.03/11	*Support implementation of emergency preparedness for national projects consistent with standards and good practice*	30 000	30 000
	K.1.03/14	*Develop improved systems for delivering compatible training/information on incident and emergency response to various networks of people with different disciplines (e.g. computer based training)*	40 000	40 000
	K.1.03/15	*Develop generic training materials on response to research reactor and fuel cycle emergencies*	20 000	20 000
	Subprogramme K.1: Radiation Safety Standards		180 000	180 000

Major Programme 3 - Nuclear Safety and Security

Core Activities Unfunded in the Regular Budget
Table 16 (Contd.)

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
K.2.01	Strengthening national regulatory control and promoting integrated safety evaluations			
	K.2.01/4	*Prepare a report on regulatory infrastructure in Member and non-Member States that would include, inter alia, the status of the implementation of the recommendations provided through RaSIA missions*	20 000	20 000
K.2.03	Maintaining information and harmonizing technical support to Member States			-
	K.2.03/10	*Establish and maintain quantitative assessment schemes for Africa, East Asia, Europe, Latin America and West Asia*	30 000	30 000
	Subprogramme K.2: Radiation Safety Infrastructures		50 000	50 000
K.3.02	Intercomparing occupational radiation protection monitoring measurements and standardizing radiation protection quantities and units			
	K.3.02/3	*Perform intercomparison exercise on methods for estimating the intake of radionuclides into the body*	-	45 000
	K.3.02/4	*Perform intercomparison exercise on measurements of the quantity personal dose equivalent Hp(d) in mixed (neutron-gamma) fields*	-	45 000
	K.3.02/7	*Perform intercomparison exercise on measurements of the quantity Hp(d) by active electronic dosimeters*	-	45 000
	K.3.02/9	*Develop and maintain an Internet resource (directory on the web) with information on external dosimetry labs in Member States*	-	20 000
	Subprogramme K.3: Occupational Radiation Protection		-	155 000
K.4.01	Optimizing radiological protection of patients in diagnostic radiology			
	K.4.01/2	*Organize special project to address radiation protection issues of new imaging technology (CT/PET)*	25 000	25 000
	K.4.01/4	*Organize special project to explore cumulative patient dose recording for series of procedures*	25 000	25 000
	K.4.01/5	*Organize special project on radiological protection of patients in pregnancy*	25 000	25 000
	Subprogramme K.4: Radiological Protection of Patients		75 000	75 000
Programme K - Radiation and Transport Safety			305 000	460 000
L.2.04	Building confidence and transferring technologies for the disposal of radioactive waste			
	L.2.04/10	*Coordinate a CRP on the use of numerical models in support of site characterization and performance assessment studies of geological repositories (2006-2010)*	60 000	30 000
	Subprogramme L.2: Disposable Waste: Management of Radioactive Waste and Disused Sealed Sources		60 000	30 000

Major Programme 3 - Nuclear Safety and Security

Core Activities Unfunded in the Regular Budget
Table 16 (Contd.)

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
L.3.02	Monitoring and maintaining an inventory of radioactive discharges to the environment			
	L.3.02/5	*Develop and maintain database on radioactive discharges to the environment (DIRATA)*	20 000	20 000
L.3.03	Achieving international agreement on modelling environmental radionuclide transfer and doses to humans and non-human species			
	L.3.03/1	*Distribute and implement computer code based on SR-19*	20 000	20 000
	Subprogramme L.3: Disposable Waste: Public and Environmental Protection		40 000	40 000
L.4.01	Developing and implementing guidance on the safe termination of nuclear activities			
	L.4.01/10	*Support the safe decommissioning of nuclear facilities; demonstration project (action plan)*	60 000	60 000
L.4.03	Developing and implementing guidance for the remediation of environments affected by radioactive residues from past activities and events			
	L.4.03/1	*Organize a radiological assessment of the Semipalatinsk Test Site*	25 000	-
L.4.05	Promoting technologies for remediation of contaminated sites			
	L.4.05/8	*Prepare a TECDOC on managing the paradigm shift from end-of-the pipe remediation to life-cycle management (2007-2009)*	-	20 000
	L.4.05/11	*Establish and maintain a network of excellence in environmental remediation (in collaboration with TC) (2006 onwards)*	12 000	14 000
	L.4.05/12	*Develop layperson's guide to environmental remediation (2007-2008)*	-	9 000
	Subprogramme L.4: Residual Waste: Decommissioning of Installations and Remediation of Sites		97 000	103 000
Programme L - Management of Radioactive Waste			197 000	173 000
Major Programme 3 - Nuclear Safety and Security			859 000	907 000

Major Programme 4 – NUCLEAR VERIFICATION

Introduction

Within the framework of this major programme the Agency's statutory mandate is being implemented to establish and administer safeguards to ensure that special fissionable and other materials, services, equipment, facilities and information are not used for proscribed purposes. In addition, the Agency is supporting under this major programme efforts of the international community in connection with nuclear arms control and reduction efforts. Verification and monitoring activities in Iraq under United Nations Security Council resolutions are included in this major programme but are managed by the Iraq Nuclear Verification Office (INVO), which reports directly to the Director General.

The safeguards programme and budget 2006–2007 has also been devised to enable the Agency to be responsive to new challenges and to anticipate future requirements related to the nuclear non-proliferation regime.

The Agency aims at having additional protocols to safeguards agreements in force in all States, as well as comprehensive safeguards agreements in all non-nuclear-weapon States that are party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) and to similar non-proliferation undertakings. This is because information provided pursuant to an additional protocol is invaluable for assessing a State's nuclear programme and in gaining a comprehensive picture of relevant export/import transactions. Accomplishing this goal depends primarily on States' political will; however, the Agency will continue its efforts under the project on Negotiation and Promotion of Comprehensive Safeguards Agreements, Additional Protocols and Subsidiary Arrangements (N.2.12) to promote the conclusion of additional protocols and to offer support to States with regard to the conclusion and implementation of such protocols.

The Agency's verification mandate includes in particular the provision of assurances that States' declarations are correct and complete. In that regard, the Agency's capability to detect undeclared nuclear material and activities has become more important. In addition to having greater access to information and nuclear and nuclear related sites, the Agency will enhance its current detection capabilities through the development and/or acquisition of more effective and better information collection, analysis and evaluation tools and detection equipment. These programmatic needs are being addressed, inter alia, in the projects on State Evaluation (N.1.06), Development of Safeguards Instrumentation (N.2.01) and Information Support for Strengthened Safeguards (N.2.13).

The Agency considers it crucial that States cooperate with regard to the provision of information related to imports and exports of nuclear material as well as of non-nuclear material and equipment. The more relevant and essential the information provided to and obtained by the Agency is, the more credible the safeguards conclusions drawn by the Agency at the State level will be. Moreover, the Agency needs to gain a better understanding of supply routes and sources of sensitive nuclear technology and materials, in order to assist in the uncovering of clandestine nuclear supply routes. Consequently, the Agency has established new activities under the project on State Evaluation (N.1.06), related to the collection of, analysis of and follow-up on all available information on such networks.

The application of integrated safeguards (IS) remains a high priority reflected in efforts to complete individual State-level integrated safeguards approaches to allow IS implementation in a timely manner under the project on System Studies and Approaches (N.2.04).

Objectives

— To provide greater assurance to the international community that States are abiding by their nuclear non-proliferation commitments.

— To improve the Agency's understanding of international transfers of nuclear proliferation sensitive material and technology.

— To contribute as appropriate to nuclear arms control and reduction efforts.

— To provide credible assurance to the United Nations Security Council (UNSC) that Iraq is complying with the provisions of UNSC 687 (1991) and other relevant resolutions.

Outcomes
— Safeguards conclusions, according to relevant safeguards agreements.
— Improved understanding of nuclear capabilities and programmes in States.
— Contribution to nuclear arms control and reduction efforts, as requested.

Performance Indicators
— Verification activities conducted to draw safeguards conclusions at State level, as necessary. — Limitations of the safeguards system identified and addressed, as necessary. — Assistance provided to State system of accounting for and control of nuclear material (SSAC's) and other relevant infrastructure as requested by Member States.
— Access to relevant information from States, open sources and other sources, available as necessary. — Adequacy of capability to collect, analyse and follow up on relevant information.
— Support provided with regard to requests for verification of weapons-origin and other fissile materials as requested by Member States.

Recurrent Project: Overall management, coordination and common activities

Major Programme 4 requires a central function to provide overall direction, the setting and coordination of policy, and general management of the programme planning and implementation.

Main outputs: This project will result in: Safeguards Implementation Reports, strategic planning documents; reporting documents; quality management system (QMS) applications; safeguards information for Country Briefs; safeguards information contributions to documents for the Policy-making Organs and other relevant documents; publications; and articles.

Major Programme 4 - Nuclear Verification

Summary of Programme Structure and Resources

Table 17

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
4.	Overall management, coordination and common activities	983 500	-	-	983 500	-	-
	Total	983 500	-	-	983 500	-	-
N.1.01	Verification in States with comprehensive safeguards agreements	1 127 100	300 000	609 000	1 121 500	300 000	609 000
N.1.02	Verification in States with comprehensive safeguards agreements and an additional protocol in force	41 794 400	109 000	1 891 000	40 743 200	109 000	1 891 000
N.1.03	Verification in States with an INFCIRC/66-type agreement	1 682 600	50 000	550 000	1 736 000	-	-
N.1.04	Verification in States with voluntary offer agreements	1 339 800	1 060 000	-	1 286 100	767 000	-
N.1.05	Information processing	2 231 600	-	-	2 233 300	-	-
N.1.06	State evaluation	4 071 200	12 000	-	4 256 700	12 000	-
N.1.07	Effectiveness evaluation	1 537 100	-	-	1 537 100	-	-
N.1.08	Provision of safeguards instrumentation	11 519 600	2 965 000	-	11 584 200	2 965 000	-
N.1.09	Sample logistics and analysis	6 760 700	500 000	-	6 760 700	500 000	-
	Subprogramme N.1: Operations	72 064 100	4 996 000	3 050 000	71 258 800	4 653 000	2 500 000
N.2.01	Development of safeguards instrumentation	3 028 600	202 000	-	3 110 400	202 000	-
N.2.02	IT application support	3 399 200	114 000	-	3 399 200	114 000	-
N.2.03	IT systems support	5 705 900	689 000	-	6 638 700	789 000	660 000
N.2.04	Systems studies and approaches	2 037 400	102 000	-	2 037 400	102 000	-
N.2.05	Quality management and standardization	1 577 100	263 000	-	1 575 100	193 000	-
N.2.06	Statistical analysis	1 975 200	150 000	-	1 975 200	150 000	-
N.2.07	Safeguards training	1 868 600	-	-	1 486 600	-	-
N.2.08	Programme and resources and administration of Member State support programmes	1 414 400	95 000	-	1 409 300	95 000	-
N.2.09	Development and implementation of a safeguards approach for a large mixed oxide fuel fabrication plant in Japan - JMOX	1 311 500	-	-	1 906 400	-	-
N.2.10	Development of an Agency verification regime for weapon origin and other fissile materials specified by the Russian Federation and the United States of America as released from defence programmes	129 400	136 000	-	129 400	136 000	-
N.2.11	Development and implementation of safeguards approaches for Chernobyl NPP	549 100	-	-	647 400	-	-
N.2.12	Negotiation and promotion of comprehensive safeguards agreements, additional protocols and subsidiary arrangements	2 044 600	300 000	-	2 084 600	300 000	-
N.2.13	Information support for strengthened safeguards	3 808 100	318 000	-	3 944 500	318 000	-
N.2.14	IAEA Safeguards Information System (ISIS) re-engineering	3 786 800	6 100 000	-	4 924 000	4 983 000	-
N.2.15	State Systems of Accounting for and Control of nuclear material (SSACs)	652 500	109 000	-	652 500	109 000	-
	Subprogramme N.2: Development and Support	33 288 400	8 578 000	-	35 920 700	7 491 000	660 000
Programme N - Safeguards		105 352 500	13 574 000	3 050 000	107 179 500	12 144 000	3 160 000

Major Programme 4 - Nuclear Verification

Summary of Programme Structure and Resources

Table 17 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
O.1.01	Ongoing monitoring and verification (OMV) operations	-	10 495 000	-	-	10 495 000	-
O.1.02	Export-import operations	-	945 000	-	-	945 000	-
O.1.03	Development and support	-	735 000	-	-	735 000	-
O.1.04	Management	-	120 000	-	-	120 000	-
	Subprogramme O.1: Verification in Iraq Pursuant to UNSC Resolutions (Extrabudgetary Funding Only)	-	12 295 000	-	-	12 295 000	-
	Programme O - Verification in Iraq Pursuant to UNSC Resolutions	-	12 295 000	-	-	12 295 000	-
	Major Programme 4 - Nuclear Verification	106 336 000	25 869 000	3 050 000	108 163 000	24 439 000	3 160 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme N. SAFEGUARDS

Rationale: The Agency concludes safeguards agreements with States which confer upon the Agency the legal obligation and authority to apply safeguards to nuclear material, facilities and other items.

Under this programme the Agency carries out verification, evaluation and development activities. These activities provide the information base upon which the Agency draws its conclusions with respect to the peaceful use of nuclear material and other items placed under safeguards. The Agency aims at enhancing this information basis to be able to respond to new challenges to nuclear safeguards, and to anticipate and prepare for future verification requirements.

In this regard, the increased importance of the Agency's capability to detect undeclared nuclear material and activities has been duly considered in the safeguards programme 2006–2007. Throughout this biennium, the Agency will continue enhancing its current detection capabilities through the development and/or acquisition of more effective information collection, analysis and evaluation tools.

Objectives:

— To provide greater assurance to the international community regarding the peaceful use of nuclear material and other items placed under safeguards.

— To provide greater assurance to the international community regarding the absence of undeclared nuclear material and activities for an increasing number of States.

— To conclude and implement comprehensive safeguards agreements and protocols additional thereto, with and in an increasing number of States.

— To develop and implement integrated safeguards approaches in States for which the Agency is able to draw and maintain the safeguards conclusions essential to such implementation.

Outcomes
— Safeguards conclusions regarding the non-diversion of nuclear material placed under safeguards and the non-misuse of items placed under safeguards.
— Safeguards conclusions regarding the absence of undeclared nuclear material and activities.
— Comprehensive safeguards agreements and additional protocols thereto concluded and implemented.

Outcomes (cont'd)
— Implementation of State-level integrated safeguards approaches.

Performance Indicators
— Number of States for which safeguards conclusions are drawn regarding the peaceful use of nuclear material and other items placed under safeguards.
— Number of States for which safeguards conclusions are drawn regarding the absence of undeclared nuclear material and activities.
— Number of States in which comprehensive safeguards agreements and protocols additional thereto are implemented.
— Number of States for which integrated safeguards are implemented.

Specific criteria for prioritization:

— First priority is given to those projects which respond directly to the Agency's mandatory obligations. The Agency is legally bound to conduct these projects under any and all circumstances and cannot postpone or defer their implementation on the basis of insufficient resources.

— Second priority is given to projects which support or enhance the Agency's performance. These projects provide the technological, methodological, information technology and research infrastructure required for effectively and efficiently conducting mandatory activities. Implementing these projects ensures that the obligations defined in the Agency's Statute and safeguards agreements and arising from decisions of the Board of Governors are met in the most effective and efficient manner.

— Third priority is given to non-mandatory projects that are carried out at the request of Member States.

Subprogramme N.1. Operations

Rationale: Under this subprogramme, safeguards are implemented with increasing effectiveness pursuant to: (a) agreements based on INFCIRC/153 (Corrected) related to States' commitments under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), or similar non-proliferation undertakings such as treaties establishing nuclear-weapon free zones; (b) agreements based on INFCIRC/66/Rev.2, which are item specific agreements; (c) Voluntary Offer Agreements concluded with the nuclear-weapon

States; and (d) protocols additional to safeguards agreements, concluded on the basis of the Model Additional Protocol (INFCIRC/540 (Corrected)).

Objectives:

— To provide credible assurance to the international community that nuclear material and other items safeguarded under agreements based on INFCIRC/153 (Corrected) are not diverted or misused.

— To provide credible assurance to the international community regarding the absence of undeclared nuclear material and activities for States with an additional protocol to their comprehensive safeguards agreement in force.

— To provide credible assurance to the international community that nuclear material, equipment, facilities and non-nuclear material safeguarded under agreements based on INFCIRC/66/Rev.2 are in peaceful use.

— To provide credible assurance to the international community that nuclear material placed under safeguards pursuant to Voluntary Offer Agreements, in States with such agreements, is not used for proscribed purposes.

Outcomes
— Safeguards conclusions: a) regarding the non-diversion of nuclear material placed under safeguards; b) regarding the absence of undeclared nuclear material and activities; c) regarding the peaceful use of nuclear material, equipment, facilities and non-nuclear material safeguarded under agreements based on INFCIRC/66/Rev. 2; and, d) that nuclear material placed under safeguards pursuant to Voluntary Offer Agreements is not used for proscribed purposes.
— Evaluated nuclear programmes at State level.
— Increased efficiency of verification activities in States where integrated safeguards are implemented.
Performance Indicators
— Rate of attainment of safeguards inspection quantity goal (as defined in IAEA Safeguards Glossary, edition 2001, 3.23). — Rate of attainment of safeguards inspection timeliness goal (as defined in IAEA Safeguards Glossary, edition 2001, 3.24). — Design information verified as necessary.
— Extent to which relevant information available to the Agency has been evaluated and considered at State level.
— Extent to which verification efforts in the field decreased in States where integrated safeguards are implemented.

Programmatic changes and trends: The challenges to the safeguards regime and anticipated developments are expected to demand an intensification of a number of programmatic activities.

The workload related to preparing and reviewing State evaluations is expected to further increase, because the Agency will need to review and analyse new and/or additional information.

Additional protocols are being implemented in an increasing number of States, including some with large nuclear fuel cycles (e.g. Kazakhstan, Ukraine and the EU). Their initial declarations will require significant effort in verification, analysis and evaluation to enable the Agency to subsequently implement integrated safeguards in those States that meet the requirements.

The Agency's verification activities in Euratom States are expected to significantly increase as a result of the expected change in the definition of Euratom's mission and role with respect to the non-proliferation regime, the review of the New Partnership Approach, and related impacts.

The verification of spent fuel transfers to dry storage are expected to require additional efforts over current levels; with currently available techniques, it is expected that significant additional effort will have to be allocated to spent fuel transfer verification, in particular in Canada, Kazakhstan and the Republic of Korea. Initiatives are in place to develop new technologies making use of the Canadian Support Programme. Under the same programme, a project is reaching completion which would reduce the inspector activity at the facility associated with spent fuel transfers under an integrated safeguards inspection regime.

The importance of environmental sampling for strengthened safeguards is expected to increase, as reflected by the growing number of environmental swipe samples taken, the broadening range of types of samples originating from complementary access and other activities, and new analytical requests.

Resource changes and trends: The proposed regular budget resources for Subprogramme N.1 amount to €71 295 900 for 2006 and €70 515 500 for 2007, reflecting an increase of €5 046 300 in 2006 over 2005 and a decrease of €780 400 in 2007 over 2006. These resource changes will be funded from within the budgetary envelopes identified in the package proposal agreed by the Board of Governors (GOV/2003/48).

The net increase in the regular budget for 2006 reflects the expansion of activities in the area of verification. The budget proposals envisage that the number of States with comprehensive safeguards agreements and additional protocols thereto in force

will grow (Project N.1.02) and that effort in Project N.1.01 — Verification in States with Comprehensive Safeguards Agreements — will decrease correspondingly. As a consequence, activities related to the review of initial declarations under additional protocols, and to verification including complementary access, as well as to State Evaluation (Project N.1.06) will increase. In addition, the Rokkasho Reprocessing Plant is expected to commence operating in 2006; applying safeguards to this facility will require significant resources. This is reflected in the re-allocation of resources to Project N. 1.02 (from Project N.2.09 in 2004–2005). Resources for Information Processing (Project N.1.05) have been adjusted to better meet the actual resource needs of this project.

The net decrease in 2007 can be attributed to a reduction in safeguards equipment for Project N.1.02.

Included within the regular budget are costs of services provided by policy making and coordination and legal services, amounting to €420 900, in support of verification and evaluation activities. Also, €5 294 800 is included for the Safeguards Analytical Laboratory for 2006 and 2007.

Extrabudgetary funds under Subprogramme N.1 (€4 996 000 in 2006 and €4 653 000 in 2007) will be primarily directed to activities under the project on Verification in States with Voluntary Offer Agreements (Project N.1.04), such as the USA, as well as for safeguards equipment (Project N.1.08).

Costs of unpredictable and/or non-recurrent activities, such as the start of a reprocessing campaign in India, a peak verification effort in the Democratic People's Republic of Korea (DPRK), or the transfer of costs for verification activities and equipment to the Agency as a result of possible new approaches to safeguards and non-proliferation by Euratom remain unfunded. The total CAURBs for which there is no funding available from any sources amount to €3 050 000 in 2006 and €2 500 000 in 2007 for Subprogramme N.1.

Financial resources (2005 prices)

N. 1	2005	2006	2007
Reg. budg.	66 249 600	71 295 900	70 515 500

Projects

Recurrent Project N.1.01: Verification in States with comprehensive safeguards agreements

Main outputs: This project will result in: statements on the results of inspections, and statement of conclusions; inspection documentation; safeguards approaches and inspection procedures developed and approved; design information verification (DIV) plans prepared and approved; DIVs carried out in accordance with plans. Technical, administrative and logistical arrangements, including subsidiary arrangements, will be made for verification. Results of pre-additional-protocol (AP) field trials will be obtained. Verification equipment will be maintained operational.

Ranking: 1

Recurrent Project N.1.02: Verification in States with comprehensive safeguards agreements and an additional protocol in force

Main outputs: This project will result in: statements on the results of inspections, statements on conclusions; inspection documentation; safeguards approaches and inspection procedures developed and approved; design information verification (DIV) plans prepared and approved; DIVs carried out in accordance with plans; statements on the results and conclusions on Complementary Access (CA) activities; technical, administrative and logistical arrangements; and modified Subsidiary Arrangement where required. Verification equipment will be installed and maintained.

Ranking: 1

Recurrent Project N.1.03: Verification in States with an INFCIRC/66-type agreement

Main outputs: This project will result in: statements on the results of inspections; inspection documentation; safeguards approaches and inspection procedures developed and approved; design information verification (DIV) plans prepared and approved; DIVs carried out in accordance with plans. Technical, administrative and logistical arrangements will be put in place in connection with the implementation of INFCIRC/66-type agreements and additional protocol measures (where applicable). Verification equipment will be installed and maintained.

Ranking: 1

Recurrent Project N.1.04: Verification in States with voluntary offer agreements

Main outputs: This project will result in: statements on the results of inspections; relevant information analysed; safeguards approaches and inspection procedures developed and approved; design information verification (DIV) plans prepared and approved; and DIVs carried out in accordance with plan. Verification equipment will be installed and maintained.

Ranking: 1

Recurrent Project N.1.05: Information processing

Main outputs: This project will result in: updated databases and semi-annual statements of book inventories.

Ranking: 1

Recurrent Project N.1.06: State evaluation

Main outputs: This project will result in: reviewed and evaluated information (inter alia) from facility records, from submissions by States, inspection results, internal databases and open sources. New and updated State Evaluation Reports will be provided.

Ranking: 1

Recurrent Project N.1.07: Effectiveness evaluation

Main outputs: This project will result in: evaluated and assessed inspection activities; evaluated selected inspection activities, quality assurance audits; Safeguards Implementation Reports (SIR); and a SIR Action Plan.

Ranking: 1

Recurrent Project N.1.08: Provision of safeguards instrumentation

Main outputs: Under this project, the following equipment will be appropriately prepared, calibrated, installed and tested (where appropriate): portable non-destructive assay (NDA) systems; resident NDA systems; sealing and containment verification systems; surveillance systems; unattended monitoring systems (UMS); remote monitoring systems and field support. Reports on equipment status, inventory, performance and utilization will be prepared.

Ranking: 1

Recurrent Project N.1.09: Sample logistics and analysis

Main outputs: This project will result in: bulk analysis of environmental samples; particle analysis of environmental samples; analyses of samples of nuclear and other specified materials; environmental sampling kits; re-coded and screened environmental samples; timely and safe shipment of inspection samples; contracts maintained with NWAL; analytical capabilities of SAL maintained; qualification of analytical laboratories and quality control throughout NWAL.

Ranking: 1

Subprogramme N.2. Development and Support

Rationale: To ensure that the Agency's safeguards regime is implemented in the most efficient and effective manner, state-of-the-art technological, methodological, information and communication infrastructures are required.

Consequently, the Agency must establish and maintain an adequate technological infrastructure through the development or enhancement of verification equipment and instrumentation, the coordination of Member State Support Programmes (MSSPs) for research and development activities being an important element.

The Agency is furthermore required to ensure the availability of necessary information and communication technology capabilities, and to develop new, and improve existing, safeguards concepts and approaches to ensure effective and efficient implementation of verification activities and to ensure the timely availability of State-level integrated safeguards approaches.

In addition, the Agency must ensure the availability of capabilities required for a timely and thorough collection, analysis and evaluation of safeguards-relevant information and of States' nuclear programmes.

Implementation of the Agency's safeguards mandate also requires the availability of adequate financial management and control as well as of human resources for the application of safeguards, in particular the availability of well trained staff and possessing necessary verification skills.

Objectives:

— To improve and enhance the technological, methodological and information infrastructure required for the adequate implementation of safeguards.

— To ensure availability and efficient and effective management of financial and human resources.

Outcomes
— Adequate technological, methodological and information infrastructure.
— Availability of adequate human resources.
— Availability of financial resources for programmatic priorities.
Performance Indicators
— Extent to which adequate safeguards technologies and instruments are developed as and when required according to needs identified. — Extent to which adequate and secure information collection and analysis tools are available as and when required. — Extent to which adequate safeguards approaches and concepts (in particularly for State-level integrated safeguards) are available as and when required according to needs identified.
— Extent to which human resources are available for core functions as and when required.

Performance Indicators (cont'd)
— Allocation of financial resources according to programmatic priorities.

Programmatic changes and trends: The following programmatic activities are expected to intensify during 2006–2007 and, consequently, impact on the allocation of human and financial resources.

It is expected that the construction of the JMOX plant will start in 2006. A facility-specific safeguards approach must be available before the plant starts operating (expected for 2011).

Compared to the original project plan, the Chernobyl NPP conditioning facility project (N.2.11) will be delayed 2–3 years and is not expected to begin before late 2007. The expected duration of this project is 10 years.

The IAEA Safeguards Information System (ISIS) is based on outdated technology, which is difficult and costly to maintain. Moreover, it limits the Agency's ability to integrate other IT applications. A large project to re-engineer the ISIS was launched in 2002 to replace the current system. The development and implementation of the new system will last 3–4 years (beginning in 2004). During 2006–2007, the ISIS Re-engineering Project (N.2.14) is expected to be at an important stage of its implementation. The new IT structure should run in parallel with the old one, which may require some adjustments in data management. It is planned to allow more efficient and effective handling of safeguards information from different sources and of different types.

Resource changes and trends: The proposed regular budget resources for Subprogramme N.2 amount to €32 939 800 for 2006 and €35 500 200 for 2007, reflecting a decrease of €1 899 500 in 2006 compared with 2005 and an increase of €2 560 400 in 2007 over 2006. These resource changes will be funded from within the budgetary envelopes identified in the package proposal agreed by the Board of Governors (GOV/2003/48).

The net decrease in 2006 can be attributed to the transfer of resources previously assigned to project Implementation of a Safeguards Approach at a Large Reprocessing Plant in Japan — JNFL (N.2.09 in 2004–2005). In 2006–2007, verification activities related to JNFL will be carried out under Subprogramme N.1 (Project N.1.02).

Regular budget resources of €544 800 in 2006 have been shifted to Development of Safeguards Instrumentation (Project N.2.01) to intensify the activities related to the development and implementation of more effective detection equipment.

Regular budget resources have been shifted to IT related projects (N.2.02, IT Application Support and N.2.03, IT Systems Support) for €368 700 and €400 000, respectively, in 2006. An increase of €894 500 in 2007 over 2006 is required for the project on IT Systems Support. This reflects the increasing importance of providing reliable, effective, up-to-date and secure IT structures to handle, store, retrieve and analyse safeguards information. These activities are the rationale for the increase of €1 117 100 in 2007 over 2006 for Project N.2.14 and the corresponding reduction in extrabudgetary resources in 2007.

The significant increase of €1.5 million in Information Support for Strengthened Safeguards (N.2.13) reflects the increased importance attributed to the collection and analysis of open source information, including satellite imagery. Resource requirements for Project State Systems of Accounting for and Control of Nuclear Material (N.2.15) increase by €361 500 in 2006 over 2005 due to the enhanced cooperation of the Agency with SSACs aiming at the improvement of their nuclear material accounting capabilities.

Resource requirements for Safeguards Training (Project N.2.07) are €377 500 higher in 2006 than in 2007, because of costs for the safeguards traineeship programme which is held every other year.

Included within the regular budget are costs of services provided by policy making and coordination and legal services, which amount to €438 900 in support of safeguards approaches, and negotiation and promotion of additional protocols.

Extrabudgetary funds expected to be received under Subprogramme N.2 amount to €8 578 000 in 2006 and €7 491 000 in 2007. Most of these funds will be directed to the re-engineering of the Agency's safeguards information system (€6.1 million for 2006 and €4.98 million for 2007). Other extrabudgetary resources are required for safeguards equipment and cost free experts and consultants who are fulfilling tasks requiring specific skills for a limited period of time. Furthermore, resource requirements of €660 000 in 2007 for the procurement and installation of security doors to access some Headquarters offices have been identified as CAURBs for which there is no funding available from any sources.

Financial resources (2005 prices)

N. 2	2005	2006	2007
Reg. budg.	34 839 300	32 939 800	35 500 200

Projects

Recurrent Project N.2.01: Development of safeguards instrumentation

Main outputs: This project will result in new and upgraded instrumentation: portable and resident non-destructive assay (NDA) systems; sealing and containment verification equipment; surveillance systems; unattended monitoring systems; and remote monitoring systems. Corresponding procedures and documentation will be provided.

Ranking: 2

Recurrent Project N.2.02: IT application support

Main outputs: This project will result in: IT solutions for handling State-supplied data; IT solutions for analysis and evaluation of safeguards information; strategic plan; Enhanced System Software Engineering Procedures; IT solutions for support systems; IT solutions for planning, implementation and documentation of verification activities, including for on-site inspections.

Ranking: 2

Recurrent Project N.2.03: IT systems support

Main outputs: This project will result in: upgraded/maintained communications technology infrastructure at headquarters and in the field; communication and storage infrastructure for remote monitoring; databases; software and hardware tools to ensure the security of safeguards data and information systems; adequate, reliable and secure technology infrastructure; and data collection systems.

Ranking: 2

Recurrent Project N.2.04: Systems studies and approaches

Main outputs: This project will result in: State-level integrated safeguards concepts and approaches; improved guidelines for additional protocol implementation such as for declaration review, complementary access and State evaluation; Policy-making Organs papers and policy papers on integrated safeguards; new model safeguards approaches, e.g. for the Pebble Bed Modular Reactor (PBMR) and for geological repositories; improved safeguards approaches (e.g. for facilities undergoing decommissioning); strategic plan for improving effectiveness and efficiency of safeguards; cost–benefit analyses (as needed); technical guidelines for State evaluation; physical model updating and revision; analyses and policy papers on implementation of new safeguards concepts and methods; and a proliferation resistance assessment methodology.

Ranking: 2

Recurrent Project N.2.05: Quality management and standardization

Main outputs: This project will result in: a Quality Manual and procedures; audit reports and improvement plans; improved processes; safeguards performance standards and norms; Safeguards Manual; quality control of Inspection Documentation Packages; seals and surveillance verification; methods and tools for reporting on verification, including additional protocol related activities.

Ranking: 2

Recurrent Project N.2.06: Statistical analysis

Main outputs: This project will result in: environmental monitoring techniques; statistical methods for safeguards inspection data; special evaluation reports on Shipper/Receiver Difference (SRD), Material Unaccounted For (MUF) and D statistics (difference between value declared by operators and those measured by the inspectors), MUF trend analysis, and the effectiveness of results. Reports will be issued on analyses of quantitative safeguards verification measurements.

Ranking: 1

Recurrent Project N.2.07: Safeguards training

Main outputs: Under this project, 30–40 basic, advanced and refresher training courses will be held. A training curriculum will be produced.

Ranking: 1

Recurrent Project N.2.08: Programme and resources and administration of Member State support programmes

Main outputs: This project will result in: programme evaluation document for 2004–2005; human resources management; programme and budget for 2008–2009. The following will be produced: Biennial Report on the Research and Development Programme for 2006–2007; application reports on Member State Support Programme Tasks; and research and development programme for 2008–2009.

Ranking: 2

Project N.2.09: Development and implementation of a safeguards approach for a large mixed oxide fuel fabrication plant in Japan — JMOX

Main outputs: This project will result in: project plan and schedule; safeguards approach document, facility attachment; design information and verification file; integrated, unattended measurement systems in facility; user requirements and procurement orders;

documentation for authorization of measurement systems for inspection use; acceptance test procedures, and reports on test results.

Duration: 2004–2009

Ranking: 1

Recurrent Project N.2.10: Development of an Agency verification regime for weapon origin and other fissile materials specified by the Russian Federation and the United States of America as released from defence programmes

Main outputs: This project will result in: model verification agreements; verification equipment; and technical, administrative and logistical arrangements.

Ranking: 3

Project N.2.11: Development and implementation of safeguards approaches for Chernobyl NPP

Main outputs: This project will result in: safeguards approach for nuclear material in former reactor unit 4 ('Shelter') and safeguards approach for transfer of irradiated fuel from wet storage and reactor units 1 to 3 to dry storage; safeguards equipment requirements and procurement orders; procured, assembled, installed, calibrated and tested safeguards equipment for verification of transfer, conditioning and storage of irradiated fuel transfer; and documentation for authorized measurement systems.

Duration: 2004–2014

Ranking: 1

Recurrent Project N.2.12: Negotiation and promotion of comprehensive safeguards agreements, additional protocols and subsidiary arrangements

Main outputs: This project will result in: comprehensive safeguards agreements, additional protocols and subsidiary arrangements; conferences, workshops and seminars will be organized to promote comprehensive safeguards agreements and additional protocols.

Ranking: 1

Recurrent Project N.2.13: Information support for strengthened safeguards

Main outputs: This project will result in: updated/maintained safeguards open source information system; collected, stored, assessed information; the capability to use commercial satellite information imagery; field trials and studies of new remote sensing systems and satellites.

Ranking: 2

Project N.2.14: IAEA Safeguards Information System (ISIS) re-engineering

Main outputs: Under this project, the core safeguards software system will be replaced.

Duration: 2003–2007

Ranking: 2

Recurrent Project N.2.15: State Systems of Accounting for and Control of nuclear material (SSACs)

Main outputs: This project will result in: up-to-date guidelines for the establishment, improvement and maintenance of effective SSACs at State and facility level; SSAC advisory mission reports issued to recipient States; provision of equipment and/or experts for implementing SSAC at State and facility level; training of SSAC personnel; and updated/upgraded curricula and course materials.

Ranking: 2

Programme O. VERIFICATION IN IRAQ PURSUANT TO UNSC RESOLUTIONS

Subprogramme O.1: Verification In Iraq Pursuant to UNSC Resolutions

Rationale: The work under this programme is based on: United Nations Security Council (UNSC) resolutions 661 (1990); 687 (1991); 707 (1991); 715 (1991); 986 (1995); 1051 (1996); 1154 (1998); 1284 (1999); 1441 (2002); and 1483 (2003). In resolution 1546 (2004), paragraph 22, the Security Council reiterated its intention to revisit the mandate of the IAEA as set forth in resolutions 687, 1284 and 1441; the proposed budget is based upon the IAEA's existing mandate.

Objective: To provide credible assurance to the United Nations Security Council (UNSC) that Iraq is complying with the provisions of UNSCR 687 (1991) and other relevant resolutions.

Outcome
— Timely detection of prohibited equipment and materials, and of evidence of proscribed activities in Iraq.
Performance Indicators
— Ability to provide credible assurance of the absence of evidence of proscribed activities in Iraq. — Presentation of the basis for this assurance in semi-annual reports to the UNSC and other documents and reports.

Specific criteria for prioritization:

— All the activities in this programme are mandatory or essential for the fulfilment of the Agency's legal obligations under UNSC resolutions.

Projects

Recurrent Project O.1.01: Ongoing monitoring and verification (OMV) operations

Main outputs: This project will result in reports of monitoring inspections, supported by surveillance videotapes, analysed samples, radiation detection records and other remote sensor data. Subsequent analysis will result in thematic technological reports providing the assessment of Iraq's residual nuclear capabilities and risks of diversion.

Ranking: 1

Recurrent Project O.1.02: Export–import operations

Main outputs: This project will result in the ongoing evaluation and assessment of notifications with regard to the relevant exports to Iraq provided by Member States pursuant to relevant Security Council resolutions, taking into account the Export–Import Mechanism approved by the Council in resolution 1051 (1996).

Ranking: 1

Recurrent Project O.1.03: Development and support

Main outputs: Under this project, field tools and the overall information needed to support inspections, analysis and export–import operations will be made available in a timely manner.

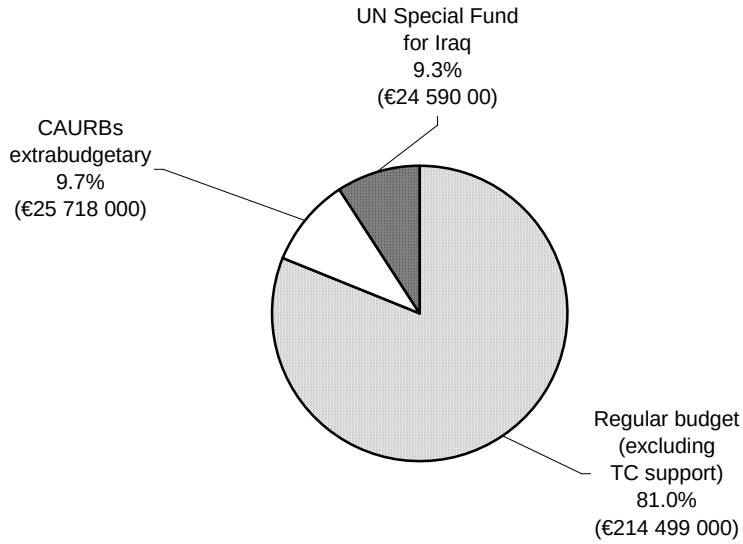
Ranking: 1

Recurrent Project O.1.04: Management

Main outputs: This project will result in the effective and efficient use of the resources put in place to implement the mandate given to the Agency by the UNSC. It will also provide the communications tools (reports, meetings, presentations, etc.) to demonstrate the credibility of the assurance provided by the Agency to the UNSC and the Member States in general.

Ranking: 1

Total Resources for Nuclear Verification in 2006–2007



	2006	2007	Total for biennium
Regular budget (excluding TC support)	106 336 000	108 163 000	214 499 000
Regular budget TC support	-	-	-
Subtotal regular budget:	106 336 000	108 163 000	214 499 000
CAURBs extrabudgetary	13 574 000	12 144 000	25 718 000
TC programme	-	-	-
Total:	119 910 000	120 307 000	240 217 000
UN Special Fund for Iraq	12 295 000	12 295 000	24 590 000
OVERALL TOTAL	132 205 000	132 602 000	264 807 000

The total resources for implementing Major Programme 4, which are illustrated (at 2006 prices) in the table and chart above, amount to €240 217 000 for the biennium. In addition, a sum of €24 590 000 from the UN Special Fund for Iraq reflects the best estimate of the funding requirements to implement a fully operational ongoing monitoring and verification system in Iraq. Regular budget resources constitute €214 499 000 or 81.0% of overall resources. The regular budget for 2006 (at 2005 prices) shows an increase of €3 141 000 compared with the adjusted budget for 2005 and a further increase of €1 780 000 in 2007 compared with 2006. These increases are in line with the 'Package Proposal'.

Extrabudgetary funding expected for the biennium accounts for €25 718 000 or 9.7% of overall resources, all of which relates to the funding of CAURBs. There is a further €6 210 000 for CAURBs (listed in Table 19) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 17 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 4

Major Programme 4 - Nuclear Verification
Summary of Regular Budget Resources for the Biennium
Table 18

	Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
4.	Overall management, coordination and common activities	984 100	(5 800)	(0.6)	978 300	-	-	978 300	0.5	983 500	983 500
	Total	984 100	(5 800)	(0.6)	978 300	-	-	978 300	0.5	983 500	983 500
N.1	Operations	66 249 600	5 046 300	7.6	71 295 900	(780 400)	(1.1)	70 515 500	1.1	72 064 100	71 258 800
N.2	Development and Support	34 839 300	(1 899 500)	(5.5)	32 939 800	2 560 400	7.8	35 500 200	1.1	33 288 400	35 920 700
Programme N - Safeguards		101 088 900	3 146 800	3.1	104 235 700	1 780 000	1.7	106 015 700	1.1	105 352 500	107 179 500
Major Programme 4 - Nuclear Verification		102 073 000	3 141 000	3.1	105 214 000	1 780 000	1.7	106 994 000	1.1	106 336 000	108 163 000

Major Programme 4 - Nuclear Verification

Core Activities Unfunded in the Regular Budget
Table 19

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
N.1.01	Verification in States with comprehensive safeguards agreements			
	N.1.01/1	*Staff and resources for additional verification of the nuclear programme in the Democratic People's Republic of Korea (DPRK)*	609 000	609 000
N.1.02	Verification in States with comprehensive safeguards agreements and an additional protocol in force			
	N.1.02/1	*Staff, equipment and travel costs for additional verification activities in Euratom States (due to expected change in the definition of Euratom's mission and role with respect to the non-proliferation regime)*	1 891 000	1 891 000
N.1.03	Verification in States with an INFCIRC/66-type agreement			
	N.1.03/1	*Verification activities at a reprocessing plant in India*	550 000	-
	Subprogramme N.1: Operations		3 050 000	2 500 000
N.2.03	IT systems support			
	N.2.03/1	*Security doors for access to Department of Safeguards, Headquarter offices*	-	660 000
	Subprogramme N.2: Development and Support		-	660 000
Programme N - Safeguards			3 050 000	3 160 000
Major Programme 4 - Nuclear Verification			3 050 000	3 160 000

Major Programme 5 – INFORMATION SUPPORT SERVICES

Introduction

The management and interchange of information, within the Secretariat, between the Secretariat and Member States, and for the benefit of the media and the general public, are essential components in the efficient delivery of the programme.

Objective

To increase understanding of the work of the Agency and its Member States and to ensure timely access to relevant scientific and technical information.

Outcome
— Efficient and effective information support services and communications strategies.
Performance Indicator
— Constraints on or ease of access to Agency information by the Secretariat, Member States, the media and the general public.

Major Programme 5 - Information Support Services

Summary of Programme Structure and Resources

Table 20

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
P.1.01	IAEA public web site (IAEA.ORG)	618 300	-	255 000	675 300	-	255 000
P.1.02	WEB services to public communication network	278 000	-	-	278 000	-	-
	Subprogramme P.1: Public Communications	896 300	-	255 000	953 300	-	255 000
P.2.01	Media relations	884 800	115 000	110 000	884 800	115 000	120 000
P.2.02	Outreach	57 600	595 000	-	57 600	595 000	-
	Subprogramme P.2: Media Relations and Outreach	942 400	710 000	110 000	942 400	710 000	120 000
P.3.01	Audio visual information materials	401 800	-	20 000	401 800	-	20 000
P.3.02	Printed public information materials	1 024 200	25 000	-	1 024 200	25 000	-
	Subprogramme P.3: Multimedia Production and Support	1 426 000	25 000	20 000	1 426 000	25 000	20 000
	Programme P - Public Information and Communication	3 264 700	735 000	385 000	3 321 700	735 000	395 000
Q.1.01	ICT direction	700 800	-	134 000	700 800	-	134 000
Q.1.02	Coordination of electronic information resources	343 600	-	-	343 600	-	-
Q.1.03	Integrated management information solution	-	-	215 000	-	-	215 000
	Subprogramme Q.1: ICT Direction and Coordination	1 044 400	-	349 000	1 044 400	-	349 000
Q.2.01	Central IT infrastructure maintenance and development	2 021 000	-	1 200 000	2 021 000	-	1 200 000
Q.2.02	Network and telecommunications infrastructure maintenance and development	1 682 500	-	60 000	1 682 500	-	60 000
	Subprogramme Q.2: ICT Infrastructure	3 703 500	-	1 260 000	3 703 500	-	1 260 000
Q.3.01	ICT customer services	1 399 800	-	-	1 399 800	-	-
Q.3.02	IT solutions implementation and improvement	1 346 900	-	-	1 346 900	-	-
	Subprogramme Q.3: ICT Customer Services and IT Solutions	2 746 700	-	-	2 746 700	-	-
	Programme Q - Information and Communications Technology (ICT)	7 494 600	-	1 609 000	7 494 600	-	1 609 000
S.1.01	Direction and coordination	1 450 000	-	-	1 450 000	-	-
S.1.02	Conference services	1 082 000	-	-	1 082 000	-	-
S.1.03	Translation and language services	-	-	-	-	-	-
S.1.04	Publishing and dissemination	2 700 700	-	-	2 643 700	-	-
S.1.05	Nuclear Fusion journal	-	-	-	-	-	-
	Subprogramme S.1: Conference, Translation and Publishing Services	5 232 700	-	-	5 175 700	-	-
	Programme S - Conference, Translation and Publishing Services	5 232 700	-	-	5 175 700	-	-
	Major Programme 5 - Information Support Services	15 992 000	735 000	1 994 000	15 992 000	735 000	2 004 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme P. PUBLIC INFORMATION AND COMMUNICATION

Rationale: The Agency has a unique responsibility to disseminate objective information in the nuclear field. Effective interaction with partners and the public is one of the goals of the Agency's Medium Term Strategy. More than being a provider of information, the Agency should also be a facilitator of a dynamic two-way communication process with its target audiences: the media, opinion leaders and policy makers. The Agency continues to adapt to remain competitive in a rapidly evolving global information marketplace. While maintaining its role as an authoritative voice on nuclear issues, it will also become a more timely, proactive and effective communicator, reaching out to a mass audience through the use of electronic and print media. The programme will offer competitive, timely, accessible and consumable communication packages for a variety of users. In doing so, it will become more effective in "influencing the influencers" and reaching a wider audience, including among the younger generation, by using a range of multimedia approaches and channels and working to promote a public communications culture across the Agency's programmes. The capacity of the Agency to achieve greater understanding by opinion leaders, media and the public and to influence the policy debate for the safe, secure and peaceful use of nuclear technologies will be further developed through this programme, using also the results of global opinion polling and public perception techniques.

Objective: To bring about more balanced and higher level debate about nuclear issues.

Outcome
— More proactive communication with the media, opinion leaders and policy makers in the fields of nuclear technology, safety, security and non-proliferation.
Performance Indicator
— Number of media reports and articles referring to the Agency's activity in nuclear technology, safety, security and non-proliferation.

Specific criteria for prioritization:

— First priority is given to the production of material that is topical, newsworthy and timely for use with media and on the external web site.

— Second priority is given to the production of material for periodic activities such as press campaigns/public service announcements, in particular areas where the Agency has achieved major results or which highlight major problems where the Agency can be of assistance.

— Third priority is given to updating of information with longer shelf-life, generally in the form of written materials.

Subprogramme P.1. Public Communications

***Rationale*:** The Internet has matured as a critical form of public communication, and small though steady inroads are narrowing gaps characterizing the world's "digital divide". The continuing popularity and growth of the Agency's newly designed public web site positions the Agency during the 2006–2007 period to reach a changing and diverse mix of target audiences in more countries than are served today. The web is not developing as a "string of links" or as a "one size fits all" communications medium. Rather, rapidly evolving communication technologies and approaches are leading to a more dynamic, interactive and multimedia set of web communications "channels" that can be tuned and targeted to inform people in ways, and languages, they need and can best understand. At the same time, effective use of these channels increasingly is seen to support policy and programme goals that cut across organizational lines, both during routine business and during times of crisis or emergency when issues hit the public spotlight and rapid response is demanded. As these developments unfold, they will further influence how public information is prepared, presented and delivered to key Agency constituencies, including government decision-makers, scientists, journalists, students, and the emerging "next generation" of leaders.

Objective: To achieve greater understanding of the Agency roles and nuclear issues and to enhance the Agency's profile as authoritative information source on the web.

Outcomes
— Improved access to and use of a wider range of authoritative, timely and user friendly web pages.
— To enhance the Agency's public profile through digital delivery of information useful to news organizations, professional communicators and other influential audiences.

Performance Indicators
— Number of visits to the Agency's web site. — Number of e-mail subscribers to news and feature items/updates. — Amount/volume of information accessed or downloaded. — Evidence of user satisfaction as indicated by user feedback.
— Number of visits, links and referrals to the Agency's site.

Programmatic changes and trends: The challenge for the Agency is to capitalize on its higher profile and growing recognition as the world's authoritative and timely voice on nuclear issues, taking more advantage of the reliance on web-based communication for accurate and timely information. Continuing investment is required and planned that enhances the human and technological capabilities that drive and develop the content, presentation and delivery of information on the public web site. As this channel of communication expands, effective and efficient web pages increasingly will influence the public's perception of the Agency. Following the implementation of a more dynamic web site and web publishing system, the work is moving to content management.

Under currently available resources, activities that can be carried out will be limited to maintaining the status quo, i.e. maintaining the current coverage of news and events and managing only the public information related part of the web site. And without extra resources being made available, particularly for staff costs, the unfunded activities stated under Project P.1.01 cannot be implemented.

The electronic version of Meetings on Atomic Energy will be phased out.

Resource changes and trends: The proposed resources for Subprogramme P.1 amount to €886 000 in 2006, reflecting an increase in the budget of €139 600, or 18.7%, over 2005, with a further increase of €56 000, or 6.3%, in 2007 over 2006.

Funds have been increased to allow the Agency to remain competitive in a rapidly evolving global information marketplace with a 10–20% growth foreseen in the number of visits to the Agency's public web site and because of the necessity to track and analyse user profiles.

Additional funds will also be used to provide information in different languages on the IAEA.org public web site.

Financial resources (2005 prices)

P.1	2005	2006	2007
Reg. budg.	746 400	886 000	942 000

Projects

Recurrent Project P.1.01: IAEA public web site (IAEA.ORG)

Main outputs: The main outputs from this project will be: news items, stories, features and special reports on Agency activities, including links to detailed references, documents, databases, background information, etc. During 2006–2007, special reports will be produced relative to the Agency's 50th anniversary that review, highlight and comprehensively report on the challenges behind and ahead. Issues related to nuclear non-proliferation proposals, as well as topics related to safety and security and global development goals, affecting or involving the Agency's work additionally will generate specific information outputs.

Ranking: 1

Recurrent Project P.1.02: WEB services to public communication network

Main outputs: This project will result in: an Internet based service delivering headlines, stories and other information to subscribers; and a computerized feedback system for evaluating comments, improving services. Periodic reports will be produced on web trends and usage.

Ranking: 1

Subprogramme P.2. Media Relations and Outreach

Rationale: The most effective means of disseminating information and messages to a global audience is through the news media. The Agency has adopted a proactive approach: its spokespersons are constantly available to answer questions and are open to providing non-restricted information, interviews and briefings; and the Agency regularly issues major international press campaigns and public service announcements. The goal is to generate news stories that positively highlight Agency activities and at the same time increase knowledge and understanding of nuclear issues, including the various applications. Demand for news from the Agency and nuclear issues has grown, and major media outlets have assigned journalists to regularly cover and investigate nuclear proliferation, security and safety. On the positive side, a number of journalists have become experts in the nuclear field and their reporting is highly accurate and balanced. But with 24 hour reporting cycles, and with the media contacting numerous and different sources from Governments,

diplomatic missions, NGOs and Agency officials, ensuring balance, accuracy and confidentiality are becoming more challenging.

Communicating well to the media and public requires trained professionals with specialized skills. The Agency's outreach efforts, under the Japanese-funded Expanded Programme for Public Understanding (EPPUNE), have been redirected to also include high impact communications training to nuclear communicators around the world. The training provides professional tools and skills to better communicate on nuclear issues to national and local publics.

Objective: To ensure accurate, balanced and objective reporting on the Agency and nuclear issues by generating global coverage in the international media. To provide training for nuclear communicators, thereby creating an international network of skilled communications professionals in the nuclear field.

Outcome
— More positive, objective and prominent news coverage of the Agency and more accurate and balanced reporting on nuclear issues.
Performance Indicators
— Number of media reports and articles referring to the Agency's activity in nuclear technology, safety, security and non-proliferation. — Number of journalists calling spokespersons for information and interviews. — Number of nuclear communicators trained.

Programmatic changes and trends: The media area is highly unpredictable, and driven by outside events, making long term planning difficult. The Agency often is forced to adapt quickly to publicly address unforeseen nuclear related events, and statements by governments, diplomats and NGOs. While much of the press work must be reactive, a proactive policy of highlighting and encouraging coverage of Agency activities and nuclear applications that get little or no press attention will be continued. At the same time, important messages that serve the Agency's goal of a nuclear secure and safe world will be provided. Additional activities include regular media analyses and placement of opinion pieces for international newspapers.

Resource changes and trends: The proposed resources for Subprogramme P.2 amount to €933 400 in 2006, reflecting a decrease in the budget of €43 600, or 4.5%, compared with 2005, with no change in 2007 compared with 2006. The decrease is a result of anticipated reductions in GS staff costs.

Financial resources (2005 prices)

P.2	2005	2006	2007
Reg. budg.	977 000	933 400	933 400

Projects

Recurrent Project P.2.01: Media relations

Main outputs: The main outputs of this project will be: press conferences, briefings, interviews with the Director General and other Agency representatives, press releases on key areas of Agency activity, press campaigns on issues and projects in need of more government and public support, media trips to Agency projects and with the Director General, and opinion articles placed in major international news outlets. Proactive media campaigns supporting Agency activities, media analyses, projects and issues will be carried out if additional financial support is available.

Ranking: 1

Recurrent Project P.2.02: Outreach

Main outputs: Under this project, seminars on the Agency and nuclear issues, technology and energy, and workshops for nuclear communicators will be held.

Ranking: 2

Subprogramme P.3. Multimedia Production and Support

Rationale: Printed public information materials — prepared, customized and distributed in print as well as electronic formats — remain an important component of effective communications, and are especially important for countries where the Internet and telecommunications are costly or not widely accessible. Publishing technologies and approaches enable skilled writers and editors to prepare and present printed information in more appealing and informative ways. Timely and concise public information packages and information kits, which use multimedia approaches customized around selected issues and themes, are proving especially useful. They facilitate reaching emerging and younger audiences, while providing communicators and journalists options to adapt such products to their interests and needs. Just as importantly, they frequently serve the interests of policy makers and other influential constituencies seeking factual and concise "issue briefs" or overviews on key nuclear developments and the Agency's work. Timely video clips, video packages, photographs and other audio-visual materials also serve the interests of television and radio that in many countries are the main source of news and information.

Objective: To improve public awareness and understanding of the Agency and its key roles in nuclear issues through timely, well written, and attractive print and audio-visual materials among target constituencies.

Outcome
— Consistent use of Agency print, video and other audio-visual materials by target constituencies as timely, accurate and reliable sources of information on nuclear issues.
Performance Indicators
— Number of subscribers/recipients of public information materials. — Number of requests for copies/reprints/updates of information materials. — Number of requests/copies for video, audio-visual materials.

Programmatic changes and trends: Multimedia public information materials in print and digital formats are likely to see higher demand in light of the Agency's high public profile and image as the world's nuclear authority. Fewer, shorter, but more issue and results oriented products are foreseen that provide balanced coverage of all parts of the Agency's work in ways that are more easily understandable to the Agency's growing base of new and more diversified public audiences.

Resource changes and trends: The proposed resources for Subprogramme P.3 amount to €1 405 000 in 2006, reflecting a decrease in the budget of €42 000, or 2.9%, compared with 2005, with no change in 2007 compared with 2006. The decrease is a result of a reduction in funds required for printing.

Financial resources (2005 prices)

P.3	2005	2006	2007
Reg. budg.	1 447 000	1 405 000	1 405 000

Projects

Recurrent Project P.3.01: Audio visual information materials

Main outputs: Films will be made of nuclear sites and people benefiting from nuclear technology (including through TC projects). Video and radio packages will be made and offered to broadcasters. Public Service Announcements (PSAs) for CNN and other networks and video news clips for the web will be produced.

Ranking: 2

Recurrent Project P.3.02: Printed public information materials

Main outputs: The main outputs are: a topical magazine in six languages (*IAEA Bulletin*); information packages on major aspects/roles of the Agency; issue briefs and fact sheets; briefing kits; and other types of customized public information materials.

Ranking: 3

Programme Q. INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

Rationale: Information and communications technology (ICT) services are vital to the Agency. They provide the means by which many of the outputs of Agency programmes are efficiently produced and delivered to their intended recipients. Increasingly, they will support closer collaboration between the staff of the Secretariat and their counterparts in the Member States, the daily communication via voice, e-mail, fax and the Internet helping to improve the information flow and make more effective and efficient the planning and implementation of Agency programmes. They allow the staff of the Secretariat to work more efficiently and innovatively, by providing access to the tools and information they need.

While the technologies continue to develop and evolve, it is important that the introduction of innovative services follows a clear strategy which is aligned with the programmatic needs of the Agency as a whole and those of the Member States. The purpose of this programme is to ensure that the Agency's programmes and its Member States derive increased benefit from ICT services. This programme: provides direction and coordination for ICT; provides for information security; establishes and maintains common standards; develops and maintains the Agency's common ICT infrastructure and provides related services; and identifies, evaluates, develops and supports innovative business solutions.

Objective: To have increased alignment of ICT infrastructure and services with the requirements of Agency programmes and Member States.

Outcome
— Secure, flexible and cost effective ICT services.
Performance Indicators
— Security breaches identified and addressed. — Responses to increasing requests gauged against costs.

Specific criteria for prioritization:

— First priority is given to the provision of ICT services for implementation of the Agency's programme.

— Second priority is given to increasing the access to Agency information resources.

— Third priority is given to producing efficiency gains in the services provided.

Subprogramme Q.1. ICT Direction and Coordination

Rationale: The needs of the Agency's programmes and those of the Members States evolve continually, while ICT technology continues to develop at a fast pace. The design of the technical architecture of the Agency's ICT infrastructure requires continual review to ensure that the evolving and emerging needs are met, that growth in capacity is provided for, that new technologies which bring additional benefit can be accommodated and that the security measures for the Agency's electronic information are equal to the threats. The strategic planning and policy setting activities will be carried out to ensure that investments in ICT technologies and security measures are kept in alignment with needs.

In order for the collection, processing and dissemination of electronic information to be performed more efficiently, sharing of common practices and standards is needed.

Objective: To ensure effective implementation of an ICT strategy aligned with the Agency's Medium Term strategy, the Agency's programme and budget for 2006–2007 and Member State requirements.

Outcome
— ICT services aligned with the needs of Agency programmes and Member States.
Performance Indicator
— Status of implementation of ICT strategy.

Programmatic changes and trends: It is not expected that major changes will occur to the direction and coordination functions of this programme.

Resource changes and trends: The proposed resources for Subprogramme Q.1 amount to €1 037 900 in 2006, reflecting a decrease in the budget of €64 800, or 5.9%, compared with 2005, with no change in 2007 compared with 2006.

The decrease from the previous biennium is due changes in staff resources.

Financial resources (2005 prices)

Q.1	2005	2006	2007
Reg. budg.	1 102 700	1 037 900	1 037 900

Projects

Recurrent Project Q.1.01: ICT direction

Main outputs: This project will result in: reviewed and updated specifications of the ICT technical architecture, of ICT services for major customers and of information security.

Ranking: 3

Recurrent Project Q.1.02: Coordination of electronic information resources

Main outputs: This project will result in: updated catalogue of the Agency's scientific and technical information and links; coordinated approach to e-learning, collaboration and knowledge management; and coordinated services and tools to assist managers in identifying, planning and using information resources in a secure, one-house manner.

Ranking: 2

Project Q.1.03: Integrated management information solution

Main outputs: The main outputs will be: a plan, describing the objectives, expected benefits, scope and approach to the realization of an integrated management information solution; an information process, designs and action plans for the major administrative processes.

Duration: 2006–2007

Ranking: 3

Subprogramme Q.2. ICT Infrastructure

Rationale: An up-to-date, reliable and secure information and communications technology infrastructure is essential as it is the main backbone on which the Agency systems are being deployed. The ERF (Equipment Replacement Fund) 2009 is intended to be used (on a 4 year cycle) to upgrade and maintain the infrastructure at the level required to ensure secure and effective delivery of ICT services.

Objective: To ensure that adequate and secure ICT infrastructure services are available to meet the needs of the Agency's programmes and Member States.

Outcomes
— Access by Agency programmes and Member States to required ICT infrastructure services.
— Security of main ICT infrastructure services.

Performance Indicators
— Availability and usage of main ICT infrastructure services.
— Implementation of recommendations of IT Security Report.

Programmatic changes and trends: The current trend to address the information and communications needs of both the Secretariat and the external users of the Agency's ICT infrastructure will continue. Agency staff, counterparts from Member States and staff belonging to Missions will have access to shared electronic information and communication services from their offices or while they are travelling. Further integration and consolidation of information and telecommunication technologies will continue, which will improve efficiency and flexibility of utilization of the technical resources, but the challenge will be to improve access and at the same time improve information security without incurring high costs. As the rate of change in programmatic needs and technology continues to accelerate, there will be a need to develop "agility", i.e. the ability to establish new services quickly.

Resource changes and trends: The proposed resources for Subprogramme Q.2 amount to €3 658 000 in 2006, reflecting an increase in the budget of €88 600, or 2.5%, compared with 2005, with no change in 2007 compared with 2006.

The increase from the previous biennium is due to higher hardware and software maintenance costs of IT infrastructure.

Financial resources (2005 prices)

Q.2	2005	2006	2007
Reg. budg.	3 569 400	3 658 000	3 658 000

Projects

Recurrent Project Q.2.01: Central IT infrastructure maintenance and development

Main outputs: Under this project, the central IT infrastructure will be maintained, with the latest proven technology, meeting the needs of Agency's programmes and Member States.

Ranking: 1

Recurrent Project Q.2.02: Network and telecommunications infrastructure maintenance and development

Main outputs: This project will result in the provision of secure and reliable network and telecommunication services meeting the needs of Agency's programmes and the Member States.

Ranking: 1

Subprogramme Q.3. ICT Customer Services and IT Solutions

Rationale: All staff of the Agency use IT and telecommunications services in their work on a daily basis. The support for these services and the ability to solve problems in a timely manner is important to the delivery of Agency programmes and the Agency's ability to carry out its obligations towards Member States.

Information systems are essential to the efficient implementation of all Agency programme areas and are the means through which the Agency's constituencies gain access to scientific and technical information deposited in the Agency. Information systems are also used to support almost all of the administrative processes of the Agency. The planning, design and deployment of information systems require not only technical expertise, but also expertise in analysing and/or re-engineering business processes to devise solutions to fully utilize the capability of modern ICT. Specifically, it provides project management and technical support for the design and deployment of information systems solutions supporting the needs of the Agency as a whole and those of specific programmes, ensuring that common approaches are taken, technical standards are adhered to, systems are integrated and data redundancy is minimized.

Objective: To ensure that ICT customers receive the agreed services.

Outcomes
— Satisfactory ICT support services.
— Information systems that meet the Agency's programmatic requirements.
Performance Indicators
— Response time for ICT service requests.
— Acceptance of systems by customers.

Programmatic changes and trends: The more customer focused, business-like approach to delivery and support of ICT services which was taken in the 2002–2003 and 2004–2005 cycles will be continued. During 2006–2007, a start should be made on integrating the information systems and databases that support the administrative processes of the Agency.

Resource changes and trends: The proposed resources for Subprogramme Q.3 amount to €2 721 300 in 2006, reflecting a decrease in the budget of €23 800, or 0.9%, compared with 2005, with no change in 2007 compared with 2006.

The decrease from the previous biennium is due to changes in staff resources.

Financial resources (2005 prices)

Q.3	2005	2006	2007
Reg. budg.	2 745 100	2 721 300	2 721 300

Projects

Recurrent Project Q.3.01: ICT customer services

Main outputs: The main outputs will be delivery of: efficient solutions to problems related to PCs and laptops; telephone switchboard services; and standard software maintenance to desktops and laptops. Content management services will be provided to authors of content for the Agency's Intranet (OASIS).

Ranking: 1

Recurrent Project Q.3.02: IT solutions implementation and improvement

Main outputs: This project will result in: the provision of efficient and cost effective information systems to staff and Member States.

Ranking: 1

Programme S. CONFERENCE, TRANSLATION AND PUBLISHING SERVICES

Subprogramme S.1. Conference, Translation and Publishing Services

Rationale: One of the major functions of the Agency is to foster the exchange of information and the dissemination of knowledge in the nuclear field among Member States. It does this by holding meetings and by issuing documents and publications in the various official languages. In addition, deliberations of the Policy-making Organs require high quality documents to be issued in a timely manner in all the official languages of the Agency. The different kinds of support necessary to carry out these activities need to be centralized and coordinated.

Objective: To ensure Member State access to relevant and timely information in the various official languages and to enable effective conduct of Agency meetings.

Outcomes
— Improved timeliness in the production and delivery of Agency documents and publications to Member States. — Efficient and effective support provided to Agency meetings.
Performance Indicators
— Documents and publications production time. — Customer satisfaction and/or complaints with regard to services provided.

Specific criteria for prioritization:

— First priority is given to the provision of essential support services for the implementation of Agency programmes.

— Second priority is given to initiatives which will further improve the services.

— Third priority is given to the provision of services to other UN organizations.

Programmatic changes and trends: Programme S has been simplified considerably: from five subprogrammes and 14 projects to one subprogramme and five projects. This simplification reflects the trend started in the biennium 2004–2005 to merge the various activities, as they are highly interrelated, in order to achieve more efficiency in delivering the programme. This interrelationship of activities is becoming stronger, owing to the increasing use of electronic means to organize meetings and publish documents, for instance through web sites. Meetings need documents, often translated, and meetings generate publications, also often translated. Organizing the activities of the programme in one seamless system rather than five separate operations will enhance the overall efficiency of delivering Programme S.

Four large operations will be merged in 2006–2007. First, all printing operations will be merged into the publishing operation, as printing is only one way of many to publish information. Second, all distribution activities will be merged into sales operations, as inventory management in the printing on demand environment is largely controlled by the sales operation.

Resource changes and trends: The proposed resources for Subprogramme S.1 amount to €5 166 400 in 2006 and €5 110 400 in 2007, reflecting a decrease of €54 000 in 2006 compared with 2005, and a further decrease of €56 000 in 2007 compared with 2006. These reductions are attributable to efficiency gains in this Subprogramme. The funds released will be used in project P.1.01 - IAEA public web site (IAEA.ORG).

Financial resources (2005 prices)

S.1	2005	2006	2007
Reg. budg.	5 220 400	5 166 400	5 110 400

Projects

Recurrent Project S.1.01: Direction and coordination

Main outputs: Regular reports on performance, productivity and customer satisfaction will be produced.

Ranking: 1

Recurrent Project S.1.02: Conference services

Main outputs: This project will provide logistical and administrative support and services and the necessary infrastructure for all the meetings of: the Board of Governors and the General Conference; the parties to treaties, conventions and agreements; and scientific and technical meetings.

Ranking: 1

Recurrent Project S.1.03: Translation and language services

Main outputs: Translated texts and summary records will be produced under this project.

Ranking: 1

Recurrent Project S.1.04: Publishing and dissemination

Main outputs: The main outputs will be: edited manuscripts; electronic files created with the use of desk-top publishing systems; publications, with graphic designs, produced and reproduced in print and electronic forms. Publications will be sold and distributed.

Ranking: 1

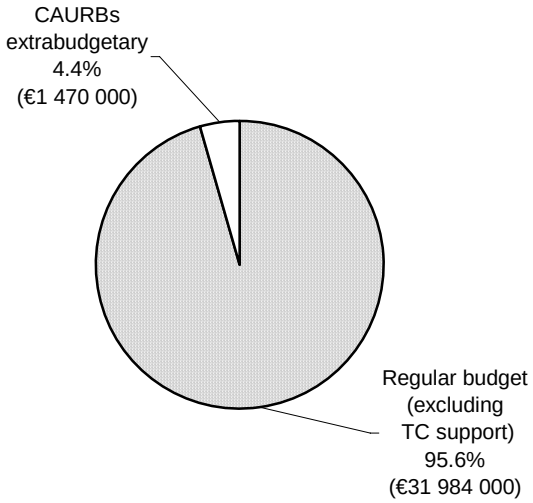
Recurrent Project S.1.05: Nuclear Fusion journal

Main outputs: Monthly publication of the peer reviewed journal *Nuclear Fusion* in print and electronic forms.

Ranking: 2

Major Programme 5

Total Resources for Information Support Services in 2006–2007



	2006	2007	Total for biennium
Regular budget (excluding TC support)	15 992 000	15 992 000	31 984 000
Regular budget TC support	-	-	-
Subtotal regular budget:	15 992 000	15 992 000	31 984 000
CAURBs extrabudgetary	735 000	735 000	1 470 000
Funds from UN organizations	-	-	-
TC programme	-	-	-
TOTAL	16 727 000	16 727 000	33 454 000

The total resources for implementing Major Programme 5, which are illustrated (at 2006 prices) in the table and chart above, amount to €33 454 000 for the biennium. Regular budget resources constitute €31 984 000 or 95.6% of this amount. The regular budget resources remain constant in both years, compared with the adjusted budget for 2005 and are in line with the 'Package Proposal'.

Extrabudgetary funding expected for the biennium accounts for a further €1 470 000 or 4.4% of total resources, all of which relates to the funding of CAURBs. There is a further €3 998 000 for CAURBs (listed in Table 22) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 20 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 5 - Information Support Services

Summary of Regular Budget Resources for the Biennium

Table 21

	Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
P.1	Public Communications	746 400	139 600	18.7	886 000	56 000	6.3	942 000	1.2	896 300	953 300
P.2	Media Relations and Outreach	977 000	(43 600)	(4.5)	933 400	-	-	933 400	1.0	942 400	942 400
P.3	Multimedia Production and Support	1 447 000	(42 000)	(2.9)	1 405 000	-	-	1 405 000	1.5	1 426 000	1 426 000
Programme P - Public Information and Communication		3 170 400	54 000	1.7	3 224 400	56 000	1.7	3 280 400	1.2	3 264 700	3 321 700
Q.1	ICT Direction and Coordination	1 102 700	(64 800)	(5.9)	1 037 900	-	-	1 037 900	0.6	1 044 400	1 044 400
Q.2	ICT Infrastructure	3 569 400	88 600	2.5	3 658 000	-	-	3 658 000	1.2	3 703 500	3 703 500
Q.3	ICT Customer Services and IT Solutions	2 745 100	(23 800)	(0.9)	2 721 300	-	-	2 721 300	0.9	2 746 700	2 746 700
Programme Q - Information and Communications Technology (ICT)		7 417 200	-	-	7 417 200	-	-	7 417 200	1.0	7 494 600	7 494 600
S.1	Conference, Translation and Publishing Services	5 220 400	(54 000)	(1.0)	5 166 400	(56 000)	(1.1)	5 110 400	1.3	5 232 700	5 175 700
Programme S - Conference, Translation and Publishing Services		5 220 400	(54 000)	(1.0)	5 166 400	(56 000)	(1.1)	5 110 400	1.3	5 232 700	5 175 700
Major Programme 5 - Information Support Services		15 808 000	-	-	15 808 000	-	-	15 808 000	1.2	15 992 000	15 992 000

Major Programme 5 - Information Support Services
Core Activities Unfunded in the Regular Budget
Table 22

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
P.1.01	IAEA public web site (IAEA.ORG)			
	P.1.01/1	*Content management and developments of the public web site*	155 000	155 000
	P.1.01/2	*Research, creation and publishing content of the IAEA.ORG public web site*	100 000	100 000
	Subprogramme P.1: Public Communications		255 000	255 000
P.2.01	Media relations			
	P.2.01/3	*Proactive media campaigns*	80 000	80 000
	P.2.01/4	*Media analyses and opinion poll*	30 000	40 000
	Subprogramme P.2: Media Relations and Outreach		110 000	120 000
P.3.01	Audio visual information materials			
	P.3.01/2	*Production of Public Service Announcements (PSAs)*	20 000	20 000
	Subprogramme P.3: Multimedia Production and Support		20 000	20 000
Programme P - Public Information and Communication			385 000	395 000
Q.1.01	ICT direction			
	Q.1.01/1	*A new position (Agency-wide Information Security Officer) required to implement the Information Security activity*	134 000	134 000
Q.1.03	Integrated management information solution			
	Q.1.03/1	*Preparation of a plan for a new integrated management information system to support optimization of main administrative processes of the Agency*	215 000	215 000
	Subprogramme Q.1: ICT Direction and Coordination		349 000	349 000
Q.2.01	Central IT infrastructure maintenance and development			
	Q.2.01/1	*Equipment Replacement Fund (ERF-2009)*	1 200 000	1 200 000
Q.2.02	Network and telecommunications infrastructure maintenance and development			
	Q.2.02/2	*Provide remote access service to the Agency*	60 000	60 000
	Subprogramme Q.2: ICT Infrastructure		1 260 000	1 260 000
Programme Q - Information and Communications Technology (ICT)			1 609 000	1 609 000
Major Programme 5 - Information Support Services			1 994 000	2 004 000

Major Programme 6 – MANAGEMENT OF TECHNICAL COOPERATION FOR DEVELOPMENT

Programme T. MANAGEMENT OF TECHNICAL COOPERATION FOR DEVELOPMENT

Introduction

In recent years, the management of technical cooperation (TC) has been strengthened through the implementation of the TC Strategy established in 1997. This moved the programme from technology driven to demand driven. In 2002, the Strategy was refined with the guidance of the Standing Advisory Group on Technical Assistance and Cooperation (SAGTAC) in order to further this change, and to promote greater ownership of projects and sustainability of outcomes by national governments.

At the heart of the Strategy is its strategic goal, which remains valid: "Technical Cooperation with Member States shall increasingly promote tangible socio-economic impact by contributing directly in a cost effective manner to the achievement of the major sustainable development priorities of each country". The four objectives of the refined strategy are:

— To produce sustainable benefits within the framework of national development plans;

— To gain recognition as a partner in resolving development problems through the cost effective transfer of nuclear technologies;

— To increase the level of funding for technical cooperation activities, particularly from non-traditional sources, and to increase the number of opportunities for direct and "parallel" funding to help resolve development problems; and

— To strengthen the capacity of institutions in Member States using nuclear technologies to become more technically and financially self-reliant.

The refinement of the TC Strategy required a shift in the management approach. More focus is now placed on the effective implementation of the programme, the strengthening of South–South cooperation and Technical Cooperation among Developing Countries (TCDC), and better assessment of project results and impact. A longer term challenge in the framework of this management approach consists of reviewing the roles and responsibilities of project stakeholders, to promote greater ownership for projects results and to contribute to the strengthening of national capacities. These initiatives are expected to improve the quality and impact of the TC programme (TCP).

The management of technical cooperation consists of: analysing the environment in which the programme operates and identifying opportunities and potential partnerships; working with Member States to establish priorities for programming and defining projects within those priorities; implementing the programme efficiently and effectively together with Member States; monitoring progress and reporting on it to Member States; designing and testing new tools, methodologies and procedures to strengthen linkages with Member States and other partners; and improving the efficiency and effectiveness of programme delivery.

Both donors and recipients of technical cooperation have an interest in seeing that the programme is well managed and is achieving results in response to the priority needs of the recipients. Funding for technical cooperation is limited and the competition for it is strong. The Agency has to demonstrate that funds received are used effectively and are producing tangible, significant and lasting results. Furthermore, as the environment within which the TCP operates evolves over time, the Agency must show that its strategy for implementing the programme responds proactively to the changing environment, while maintaining high standards of quality.

During the formulation of this major programme, the lessons learnt from previous performance reports were taken into consideration by refining the performance indicators and outcomes. Consequently, IT systems are being adapted to collect the required data for improved performance reporting.

Objective: To contribute to sustainable and significant social and economic benefits in Member States and their increased self-reliance in the application of nuclear techniques.

Outcomes
— Increased efficiency, effectiveness, relevance and transparency in the TC programme to meet Member States' needs.
— Expanded national competencies and networking including in the framework of TCDC and South–South cooperation.
— Expanded cooperation with partner organizations.
— Increased level of funding for TC activities.

Performance Indicators
— Percentage of new TC projects in the 2007–2008 programme which are clearly linked to a Country Programme Framework. — Percentage of new TC projects linked to Millennium Development Goals.
— Number of institutions, including Regional Resource Centres, in Member States that provide services nationally and regionally after having benefited from the Agency's TC programme. — Number of experts from developing countries supporting the delivery of the TC programme.

Performance Indicators (cont'd)
— Number of memoranda of understanding and agreements signed with partners.
— Number of countries paying in full and/or increasing their TC Fund contributions. — Percentage of average annual increase in extrabudgetary funding to the TC programme.

Specific criteria for prioritization:

— First priority has been given to the formulation and implementation of projects that contribute directly to meeting Member States needs and to related essential support activities.

— Second priority has been given to functions that support or further enhance the programme quality and performance.

— Third priority has been given to strengthening information exchange.

Major Programme 6 - Management of Technical Cooperation for Development

Summary of Programme Structure and Resources

Table 23

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
6.	Overall management, coordination and common activities	538 300	-	-	538 300	-	-
	Total	538 300	-	-	538 300	-	-
T.1.01	Concepts and planning	1 083 800	-	-	1 083 800	-	-
T.1.02	Programme coordination and reporting	1 302 800	80 000	-	1 302 800	-	-
T.1.03	Information technology support	1 007 000	-	-	1 007 000	-	-
	Subprogramme T.1: Strategic Planning and Coordination	3 393 600	80 000	-	3 393 600	-	-
T.2.01	Formulation and implementation of the programme for Africa	2 188 000	-	-	2 188 000	-	-
T.2.02	Formulation and implementation of the programme for Asia and the Pacific	2 910 900	136 000	-	2 910 900	136 000	-
T.2.03	Formulation and implementation of the programme for Europe	2 256 500	-	-	2 256 500	-	-
T.2.04	Formulation and implementation of the programme for Latin America	1 783 500	-	-	1 783 500	-	-
T.2.05	Formulation and implementation of the interregional programme	883 200	-	-	883 200	-	-
T.2.06	Field procurement	1 442 000	-	-	1 442 000	-	-
	Subprogramme T.2: Programme Formulation and Implementation	11 464 100	136 000	-	11 464 100	136 000	-
	Programme T - Management of Technical Cooperation for Development	14 857 700	216 000	-	14 857 700	136 000	-
	Major Programme 6 - Management of Technical Cooperation for Development	15 396 000	216 000	-	15 396 000	136 000	-

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Recurrent Project: Overall management, coordination and common activities

The TC programme operates in four different regions and across all thematic areas of the Agency's programme. It is the major mechanism of direct services to Member States. Overall management and coordination are important to ensure that quality across the programme remains high and that all regions are treated consistently. Good relations with senior officials in Member States and with other development partners are necessary to create new strategic partnerships.

Main outputs: Strategy, direction and guidelines for programme management; improved processes and procedures for effective project/programme planning, design, implementation and monitoring; and resource mobilization strategies that improve funding performance.

Subprogramme T.1. Strategic Planning and Coordination

Rationale: Effective management of technical cooperation calls for continuous improvement in programme performance and the operational environment. The key dimensions for enhancing programme performance relate to improved guidance and the application of quality standards, while improving the operating environment requires analysis, planning, monitoring and management of changes. Effective and efficient implementation of the TC Strategy requires development of new tools and approaches. There is also a need to report on the performance of the TC programme to Member States, accounting for the use of the funding they have provided and the extent to which the expected results of the programme have been achieved, and to present future plans for their approval.

Objective: To further improve the quality of the TC programme management and to optimize the operational environment.

Outcomes
— Increased application of quality management standards.
— Opportunities identified for development of partnerships and extrabudgetary funds mobilized.
Performance Indicators
— Quality assurance and monitoring systems in place and fully operational. — Number of improved procedures introduced.
Performance Indicators (cont'd)
— Number of memoranda of understanding or agreements signed with partners. — Percentage of average annual increase of extrabudgetary funds for the TC programme.

Programmatic changes and trends: Major Programme 6 aims at adopting a more proactive approach with regard to external communication, fund raising and partnership in order to raise awareness and understanding of the benefits derived from the TC programme. A systematic development and formalization of these functions is planned. A second field of change concerns the monitoring of and reporting on project achievements by improving and establishing new mechanisms, procedures and IT systems for quality management.

Resource changes and trends: The proposed regular budget resources for Subprogramme T.1 amount to €3 364 400 in 2006, reflecting an increase in the budget of €256 200, or 8.2% compared with 2005, with no change in 2007 compared with 2006. The increase reflects mainly the need for additional human resources to address strategic objectives and strengthen the effectiveness of Major Programme 6. This increase is being funded from the increased budgetary envelope over 2005 and from a shift of resources from Subprogramme T.2.

Financial resources (2005 prices)

T.1	2005	2006	2007
Reg. budg.	3 108 200	3 364 400	3 364 400

Projects

Recurrent Project T.1.01: Concepts and planning

Main outputs: This project will result in: thematic plans; concept papers and analytical reports on development trends; partnership agreements containing cooperation and financing arrangements; guidelines and reports on subjects of collaboration, opportunities for programme direction or integration; fact sheets and information products that support external communication; and a project and programme performance monitoring and reporting system.

Ranking: 1, 2 and 3

Recurrent Project T.1.02: Programme coordination and reporting

Main outputs: This project will result in: reports, web sites, databases, trained personnel, budget information and budget revisions, operational procedures.

Ranking: 1, 2 and 3

Recurrent Project T.1.03: Information technology support

Main outputs: This project will result in: improved IT infrastructure; Internet based information retrieval systems; collaborative systems; and Internet based systems to support electronic submissions.

Ranking: 1, 2 and 3

Subprogramme T.2. Programme Formulation and Implementation

Rationale: A well designed and efficiently delivered TC programme contributes substantially to the achievement of scientific and development objectives and to institutional capacity building in Member States. There is also a need to identify those areas that are most likely to create significant impact and attract possible strategic partners and sources of non-traditional funding. This requires not only knowledge of the development priorities of Member States and the ways in which nuclear technology contributes to them, but also the ability to manage and apply resources efficiently and effectively to achieve those objectives.

Objective: To respond to relevant developmental priorities of Member States through effective programme management in accordance with quality standards and strategic objectives.

Outcomes
— Government-owned Country Programme Framework (CPF) processes and the approval of CPF based TC projects designed and formulated to respond to the developmental needs of Member States.
— Increased number of programmes that enjoy high government and/or donor commitment (as reflected in the allocation/mobilization of resources) and/or involvement of other partners, as a result of their improved design and clearly identified beneficiaries.
— An increasing number of institutions in Member States which achieved self-reliance in the sustainable application of nuclear techniques and are capable of utilizing their development capacity for entering into strategic partnerships in order to provide or improve the quality and quantity of their services and products.
Performance Indicators
— Number of signed or updated CPFs during a year. — Percentage of new TC projects in 2007–2008 TC programme which are clearly linked to a CPF.
Performance Indicators (cont'd)
— Percentage of new TC projects, approved for the respective TC cycle, which meet the Central Criterion. — Level of extrabudgetary contributions for TC activities where donor is recipient as a percentage of the annual adjusted TC programme. — Level of extrabudgetary contributions for TC activities where donor is not recipient as a percentage of the annual adjusted TC programme.
— Number of designated Regional Resource Centres. — Number of institutions with increased income generation and/or services rendered and products shared at the national/ regional level.

Programmatic changes and trends: More focus will be given to the development of Country Programme Frameworks (CPFs) as a process and tool for identifying TC projects, thereby enhancing the relevance and sustainability of TC projects through a clear linkage to national development priorities. The TC Department will also be reviewing the roles and responsibilities of project stakeholders in the planning, implementation, monitoring and assessment processes to allow for expanded participation of Member States in TC processes and better accessibility of information. Strengthening South–South cooperation and Technical Cooperation among Developing Countries for the promotion of self-reliance will also be pursued.

Increased global attention to the area of nuclear security has resulted in the need for closer coordination with the nuclear safety and security programmes to strengthen national capacities in the field. Though the nuclear security related activities are mainly funded from the Nuclear Security Fund and other extrabudgetary sources such as the Nuclear Threat Initiative, TC delivery mechanisms are extensively used.

Following a review of processes and assessment of workload of the Department of Technical Cooperation, the Office for Internal Oversight (OIOS) recommended consolidating the present five regional Sections into four. Thus the management of the programme for 17 Member States under the 2004–2005 Project T.2.03 (Formulation and Implementation of the Programme for West Asia) was transferred to Projects T.2.02 (Asia and the Pacific, in 2004–2005 East Asia and the Pacific) and T.2.03 (Europe) (T.2.04 in 2004–2005).

The shift from a technology driven to a demand driven TC Programme (TCP) has posed great challenges to TC management, structure and resources. Moreover an increasing number of Member States are participating in the TCP. Under these circumstances, a continuous challenge for

Major Programme 6 is to ensure that adequate resources, both human and financial, are available to respond to Member State needs.

Resource changes and trends: The proposed regular budget resources for Subprogramme T.2 amount to €11 356 300 in 2006, reflecting a decrease in the budget of €231 200, or 2.0%, compared with 2005, with no change in 2007 compared with 2006. This decrease results from a realignment of resources within Programme T.

Financial resources (2005 prices)

T.2	2005	2006	2007
Reg. budg.	11 587 500	11 356 300	11 356 300

Projects

Recurrent Project T.2.01: Formulation and implementation of the programme for Africa

Main outputs: The TC programme for Africa for the 2007–2008 cycle will be formulated in accordance with Member State priorities. With regard to implementation, major outputs for the two-year cycle will include trained fellows, completed expert assignments, regional training courses organized and completed meetings/workshops. Country Programme Frameworks will be available for programming purposes and fund raising.

Ranking: 1 and 2

Recurrent Project T.2.02: Formulation and implementation of the programme for Asia and the Pacific

Main outputs: The TC programme for Asia and the Pacific for the 2007–2008 cycle will be formulated in accordance with Member State priorities. With regard to implementation, major outputs for the two-year cycle will include trained fellows, completed expert assignments, regional training courses organized and completed meetings/workshops. Country Programme Frameworks will be available for programming purposes and fund raising.

Ranking: 1 and 2

Recurrent Project T.2.03: Formulation and implementation of the programme for Europe

Main outputs: The TC programme for Europe for the 2007–2008 cycle will be formulated in accordance with Member State priorities. With regard to implementation, major outputs for the two-year cycle will include trained fellows, completed expert assignments, regional training courses organized and completed meetings/workshops. Country Programme Frameworks will be available for programming purposes and fund raising.

Ranking: 1 and 2

Recurrent Project T.2.04: Formulation and implementation of the programme for Latin America

Main outputs: The TC programme for Latin America and the Caribbean for the 2007–2008 cycle will be formulated in accordance with Member State priorities. With regard to implementation, major outputs for the two-year cycle will include trained fellows, completed expert assignments, regional training courses organized and completed meetings/workshops. Country Programme Frameworks will be available for programming purposes and fund raising.

Ranking: 1 and 2

Recurrent Project T.2.05: Formulation and implementation of the interregional programme

Main outputs: The interregional TC programme for the 2007–2008 cycle will be formulated in accordance with priority needs affecting more than one region. With regards to implementation, major outputs will include trained fellows, completed experts assignments and completed meetings/workshops.

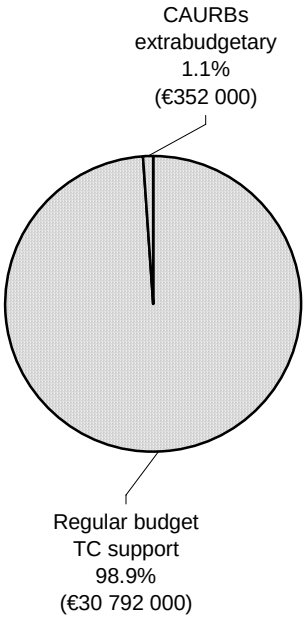
Ranking: 1 and 2

Recurrent Project T.2.06: Field procurement

Main outputs: This project will result in: equipment and supplies delivered and technical services provided to recipient countries under the approved TC projects.

Ranking: 1

Total Resources for Management of Technical Cooperation for Development in 2006–2007



	2006	2007	Total for biennium
Regular budget (excluding TC support)	-	-	-
Regular budget TC support	15 396 000	15 396 000	30 792 000
Subtotal regular budget:	15 396 000	15 396 000	30 792 000
CAURBs extrabudgetary	216 000	136 000	352 000
Funds from UN organizations	-	-	-
TC programme	-	-	-
TOTAL	15 612 000	15 532 000	31 144 000

The total resources for implementing Major Programme 6, which are illustrated (at 2006 prices) in the table and chart above, amount to €31 144 000 for the biennium. Regular budget resources constitutes €30 792 000 or 98.9% of this amount. The regular budget for 2006 (at 2005 prices) shows an increase of €25 000 compared with the adjusted budget for 2005 and no increase in 2007 compared with 2006. The increase is in line the 'Package Proposal'.

Extrabudgetary funding expected for the biennium accounts for a further €352 000 or 1.1% of total resources, all of which relates to the funding of CAURBs. Summary data on the regular budget proposals and extrabudgetary resources expected to be available are set out — by project, subprogramme and programme — in Table 23 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 6 - Management of Technical Cooperation for Development

Summary of Regular Budget Resources for the Biennium

Table 24

	Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
6.	Overall management, coordination and common activities	534 300	-	-	534 300	-	-	534 300	0.7	538 300	538 300
	Total	534 300	-	-	534 300	-	-	534 300	0.7	538 300	538 300
T.1	Strategic Planning and Coordination	3 108 200	256 200	8.2	3 364 400	-	-	3 364 400	0.9	3 393 600	3 393 600
T.2	Programme Formulation and Implementation	11 587 500	(231 200)	(2.0)	11 356 300	-	-	11 356 300	0.9	11 464 100	11 464 100
Programme T - Management of Technical Cooperation for Development		14 695 700	25 000	0.2	14 720 700	-	-	14 720 700	0.9	14 857 700	14 857 700
Major Programme 6 - Management of Technical Cooperation for Development		15 230 000	25 000	0.2	15 255 000	-	-	15 255 000	0.9	15 396 000	15 396 000

Major Programme 7 – POLICY AND GENERAL MANAGEMENT

Introduction

An international organization such as the Agency requires active leadership, direction and support, under the authority of the Director General, for all its activities and initiatives to achieve the goals and objectives of the Medium Term Strategy. Effective coordination is essential for instituting a one-house approach in all aspects of its work, particularly with respect to overall policies, interactions with Member States, the development and implementation of programmes and the evaluation and assessment of performance.

A major effort will be made to provide a wide range of effective and efficient administrative, legal and general services to support activities in other Agency programmes. A service oriented culture will be actively promoted to meet the needs of all customers, including Secretariat staff and Member States.

Objective

To fully institute the one-house and results based approaches that will ensure relevance, transparency, effectiveness and efficacy of all Agency programmes, activities and use of resources.

Outcomes
— Formulation, implementation, assessment and evaluation of the Agency's programme fully coordinated.
— Timely and appropriate legal, administrative and financial services provided to the scientific and technical programmes of the Agency.
Performance Indicators
— Absence of duplication and overlap in programme management. — Satisfaction or complaints about legal, administrative and financial services.

Major Programme 7 - Policy and General Management

Summary of Programme Structure and Resources

Table 25

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
U.1.01	Executive management	1 337 800	-	-	1 337 800	-	-
U.1.02	External relations	1 496 400	-	-	1 496 400	-	-
U.1.03	Policy coordination and support	616 600	-	-	616 600	-	-
	Subprogramme U.1: Executive Management	3 450 800	-	-	3 450 800	-	-
U.2.01	General management	710 400	-	-	710 400	-	-
U.2.02	Programme planning and formulation	415 100	-	-	415 100	-	-
U.2.03	Management standards, processes and procedures	491 400	-	-	491 400	-	-
	Subprogramme U.2: General Management and Programme Coordination	1 616 900	-	-	1 616 900	-	-
U.3.01	Servicing meetings of the Board of Governors and General Conference	2 779 700	-	-	2 779 700	-	-
U.3.02	Planning for meetings of the Policy-making Organs	3 379 500	-	-	3 379 500	-	-
	Subprogramme U.3: Services for Policy-Making Organs	6 159 200	-	-	6 159 200	-	-
U.4.01	Legal services to Policy-making Organs and the Secretariat	1 202 700	-	-	1 202 700	-	-
U.4.02	Implementation of legal aspects of conventions for which the Director General is depositary	451 400	-	-	451 400	-	-
U.4.03	Legal services to Member States	453 000	-	-	453 000	-	-
U.4.04	Inter-agency legal matters	77 600	-	-	77 600	-	-
	Subprogramme U.4: Legal Activities	2 184 700	-	-	2 184 700	-	-
	Programme U - Executive Management, Policy-Making and Coordination	13 411 600	-	-	13 411 600	-	-
V.1.01	Direction	563 900	-	-	563 900	-	-
V.1.02	Budgeting, accounting, control and reporting	2 702 800	-	-	2 702 800	-	-
V.1.03	Payment processing and treasury	2 341 100	-	-	2 341 100	-	-
V.1.04	Financial systems support	1 368 500	-	-	1 368 500	-	-
	Subprogramme V.1: Financial Management	6 976 300	-	-	6 976 300	-	-
V.2.01	Direction	882 700	-	-	878 700	-	-
V.2.02	Human resources planning	452 200	-	-	467 900	-	-
V.2.03	Recruitment	1 198 800	-	-	1 198 800	-	-
V.2.04	Staff administration	1 162 000	-	-	1 162 000	-	-
V.2.05	Personnel management information	439 400	-	-	428 600	-	-
V.2.06	Staff development and training	641 500	-	-	640 600	-	-
V.2.07	Staff council	167 600	-	-	167 600	-	-
V.2.08	Medical service	936 600	-	-	936 600	-	-
	Subprogramme V.2: Human Resources Management	5 880 800	-	-	5 880 800	-	-

Major Programme 7 - Policy and General Management

Summary of Programme Structure and Resources

Table 25 (Contd.)

	Project / Subprogramme / Programme	2006 Regular Budget at 2006 prices	2006 Extra-budgetary a_/	2006 CAURBs Unfunded	2007 Regular Budget at 2006 prices	2007 Extra-budgetary a_/	2007 CAURBs Unfunded
V.3.01	Direction and coordination	643 000	-	-	643 000	-	-
V.3.02	BMS - common service	10 382 000	-	-	10 382 000	-	-
V.3.03	UNSSS - common service	2 982 000	-	-	2 982 000	-	-
V.3.04	Facilities management services	1 469 600	-	700 000	1 469 600	-	700 000
V.3.05	Archives and records management services	3 261 200	-	-	3 261 200	-	-
V.3.06	Travel and transportation services	2 561 500	-	-	2 561 500	-	-
V.3.07	Operation of the commissary	-	-	-	-	-	-
V.3.08	Procurement services	1 903 100	-	-	1 903 100	-	-
	Subprogramme V.3: General Services	23 202 400	-	700 000	23 202 400	-	700 000
	Programme V - Administration and General Services	36 059 500	-	700 000	36 059 500	-	700 000
W.1.01	Audit and investigation	604 600	-	-	604 600	-	-
W.1.02	Training on risk management	172 300	-	-	172 300	-	-
W.1.03	Participation in Agency systems development and management improvement	255 400	-	-	255 400	-	-
	Subprogramme W.1: Internal Audit and Investigations	1 032 300	-	-	1 032 300	-	-
W.2.01	Evaluation of technical cooperation activities	344 900	-	-	344 900	-	-
W.2.02	Thematic evaluation	249 300	-	-	249 300	-	-
W.2.03	Training of Member State counterparts and staff in conducting self-evaluation	82 900	-	-	82 900	-	-
	Subprogramme W.2: Programme Evaluation	677 100	-	-	677 100	-	-
W.3.01	Programme implementation monitoring	25 100	54 400	-	25 100	54 400	-
W.3.02	Programme performance assessment	53 400	81 600	-	53 400	81 600	-
	Subprogramme W.3: Programme Implementation Monitoring and Performance Assessment	78 500	136 000	-	78 500	136 000	-
	Programme W - Oversight Services and Performance Assessment	1 787 900	136 000	-	1 787 900	136 000	-
	Major Programme 7 - Policy and General Management	51 259 000	136 000	700 000	51 259 000	136 000	700 000

a_/ Includes CAURBs extrabudgetary and funds from other UN organizations (where applicable) - see Tables 3A and 3B for details.

Programme U. EXECUTIVE MANAGEMENT, POLICY-MAKING AND COORDINATION

Rationale: In order to be responsive to new requirements, interests and needs of Member States, the Agency needs a central function to provide for overall direction, the setting and coordination of policy, and the general management of programme planning and implementation. This function must be backed by adequate legal services and services to the Policy-making Organs of the Agency.

Objective: To have strengthened one-house and results based approaches to all Agency activities.

Outcome
— Effective, efficient and legally sound execution of Agency programmes and activities.
Performance Indicators
— Common policies and processes identified and promulgated.
— Methodologies of results based management implemented throughout Agency programmes.

Specific criteria for prioritization:

— First priority is given to activities related to leadership, quality management, overall direction and coordination of the programme and budget, policy-making, legal services and relations with Member States.

— Second priority is given to the development of management standards.

— Third priority is given to inter-agency matters.

Subprogramme U.1. Executive Management

Rationale: An effective response by the Secretariat to the needs and interests of Member States, other international organizations and staff requires leadership in all Agency activities, appropriate representation at relevant forums and effective communication with all constituencies.

Objective: To ensure effective execution of the Agency's mandate, with the full support of Member States, by providing the necessary leadership and coordination of all Agency activities at the policy level for achieving a one-house culture and results based management approach.

Outcome
— Support by Member States and international organizations on major directions and policies in furthering implementation of the Agency's mandate.
Performance Indicator
— Extent of acceptance of, and support for, proposals made by the Director General.

Programmatic changes and trends: Interaction with governments, senior management of international organizations and civil society will continue to be strengthened and the scope of such interaction broadened. The one-house concept and results based management approach to programme formulation will be improved in light of the experience and lessons learned from the previous biennia.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

U.1	2005	2006	2007
Reg. budg.	3 419 000	3 419 000	3 419 000

Projects

Recurrent Project U.1.01: Executive management

Main outputs: Policy guidance and instructions will be developed and issued. Statements will be delivered at important meetings and events, particularly the meetings of the Policy-making Organs.

Ranking: 1

Recurrent Project U.1.02: External relations

Main outputs: Regular correspondence and contacts with all Member States on all areas of Agency activities will be maintained, including through Liaison Offices in New York and Geneva. Members of Permanent Missions will be briefed on all relevant programme matters to explain Agency policies as required. Good working relations and cooperation will be maintained with other intergovernmental and international organizations. Contact with NGOs, civil society and the nuclear industry will be maintained through the organization of meetings. The plan of action for the conclusion of safeguards agreements and additional protocols will be adjusted in order to maximize its effectiveness. Protocol services will be provided.

Ranking: 1

Recurrent Project U.1.03: Policy coordination and support

Main outputs: Assistance in the development, coordination and implementation of Agency policies in all areas of the Agency's activities will be provided. Contributions will be made to the preparation of documents for the Board of Governors and the General Conference and other relevant documents and correspondence. As part of the central coordination role, comprehensive briefings for the Director General (and other senior Agency staff as appropriate) will be provided for all relevant external meetings. Other services, provided for the organization as a whole, include advising and facilitating travel security clearance as necessary.

Ranking: 1

Subprogramme U.2. General Management and Programme Coordination

Rationale: The implementation of the one-house approach in addressing the needs and priorities of Member States requires overall coordination and constant monitoring of the Agency's operations. If results based management is to be effective at all levels of the Agency, it requires constant and continuous effort and commitment from senior management. Coordination of these efforts is essential for drawing full benefits from results based management in terms of process improvement, change management, quality management, and productivity and efficiency gains.

Objective: To ensure the improvement of general management practices and administrative services throughout the Agency and the effective and full implementation of the results based approach in programme development.

Outcomes
— Improved management techniques and practices, including those associated with change management and quality management, introduced and implemented.
— Effective programme coordination.
Performance Indicators
— Number of improved management techniques and practices.
— Cases of necessary coordination addressed and resolved.

Programmatic changes and trends: Processes and practices in the general and administrative support services will be constantly reviewed and improved. Results based management will be key to the development and implementation of administrative procedures. Particular emphasis will be put on better coordination of all cross-cutting areas identified in the Agency's programmes. Change management practices will be strengthened to draw maximum benefit from new initiatives.

Resource changes and trends: The proposed resources for Subprogramme U.2 amount to €1 605 200 in 2006, reflecting a decrease in the budget of €37 000, or 2.3%, compared with 2005, with no change in 2007 compared with 2006.

The decrease reflects the cost of staff time reallocated to Subprogramme W.3 (Programme Implementation Monitoring and Performance Assessment).

Financial resources (2005 prices)

U.2	2005	2006	2007
Reg. budg.	1 642 200	1 605 200	1 605 200

Projects

Recurrent Project U.2.01: General management

Main outputs: The main outputs of this project will be: management decisions and guidance; recommendations of the Programme Coordination Committee (PCC) to the Director General; recommendations of the High Level Committee on Management (HLCM) to the Chief Executives Board (CEB); and recommendations of the Consultative Committee on Common Services (CCCS).

Ranking: 1

Recurrent Project U.2.02: Programme planning and formulation

Main outputs: Programme documents for the 2008–2009 biennium will be issued for consultations with Member States. Guidelines and training material for the preparation of the programme in the framework of the results based approach and for the formulation of activities in specific thematic areas will be prepared. Advice and guidance will be provided for the management and coordination of cross-cutting areas and status reports will be produced.

Ranking: 1

Recurrent Project U.2.03: Management standards, processes and procedures

Main outputs: Recommendations from the OIOS Management Services to improve management techniques and practices, organizational design and management tools will be provided to senior management. SEC/NOTs on administrative procedures and the updating of administrative manual will be coordinated.

Ranking: 1

Subprogramme U.3. Services for Policy-Making Organs

Rationale: The Policy-making Organs, established by the Agency's Statute, require the provision of a range of Secretariat services to enable them to properly discharge their responsibilities.

Objective: To enable the Policy-making Organs to effectively discharge their statutory responsibilities and exercise their other functions and ensure that all meetings of the Policy-making Organs, particularly of the General Conference and the Board of Governors, have the required support and resources to be conducted efficiently and in a timely manner.

Outcome
— Full use of the most effective support for conduct of business of the Policy-making Organs.
Performance Indicators
— Timely submission of quality documentation to the Policy-making Organs. — Satisfaction of Member States with the services provided to the Policy-making Organs.

Programmatic changes and trends: The Secretariat will continue to intensify its liaison with Member States with a view to eliciting in an optimal manner their views, and helping to ensure that consensus is reached, to the extent possible, on all items before the Policy-making Organs.

The Secretariat will further continue to develop the electronic dissemination of relevant documentation in order to expand the range of documentation available and to improve the ease and speed with which users can access it. Efforts will be made to ensure an even distribution of items over the different meetings of the Board of Governors.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

U.3	2005	2006	2007
Reg. budg.	6 102 800	6 102 800	6 102 800

Projects

Recurrent Project U.3.01: Servicing meetings of the Board of Governors and General Conference

Main outputs: Secretariat functions will be carried out and advice and guidance provided during meetings of the Board of Governors and General Conference. Summaries of discussions will be prepared at the request of the Chairman or the President, and records of meetings will be produced and published.

Ranking: 1

Recurrent Project U.3.02: Planning for meetings of the Policy-making Organs

Main outputs: Meeting agendas will be issued and the preparation of the relevant documentation for meetings of the Policy-making Organs will be coordinated. Liaison with Member States on the appointment of officers and on agenda matters for the various meetings will be maintained. Coordination with relevant parts of the Secretariat will be implemented. Scenarios for the Chairman and President will be prepared.

Ranking: 1

Subprogramme U.4. Legal Activities

Rationale: As an international organization, the Agency must carry out its activities in a legally sound manner. Legal advice is therefore needed on the implementation of all aspects of the Agency's programme.

Objective: To provide for the highest possible standards of legal advice to the Director General, the Secretariat and to the organs and bodies of the Agency, and on request to Member States.

Outcome
— Higher quality in programme implementation following timely and appropriate legal advice.
Performance indicator
— Continued use by clients of the legal services provided.

Programmatic changes and trends: The increase of the general need for legal support, including substantial work in connection with strengthened safeguards, other verification activities for protection against nuclear terrorism and technical cooperation is expected to continue. This is also true for other requests and the demand from Member States for assistance in the preparation of national legislation, in particular that relating to the implementation of international agreements to which they are a party, as well as a greater involvement in the development of safety standards. The areas of personnel and management continue to require an increasing amount of legal support.

Resource changes and trends: Resources remain constant in both years compared with 2005.

Financial resources (2005 prices)

U.4	2005	2006	2007
Reg. budg.	2 165 000	2 165 000	2 165 000

Projects

Recurrent Project U.4.01: Legal services to Policy-making Organs and the Secretariat

Main outputs: This project will result in legal support being provided on the implementation of the Agency's obligations under international instruments. Legal services will be provided to the organs and bodies of the Agency in their conduct and decision making processes. Legal support will be provided to the Agency's activities in the establishment and application of norms and standards in the nuclear field. Legal support will be provided in all activities of the Secretariat, through which agreements, memoranda of understanding, contracts and other such instruments will be drafted, negotiated, concluded, interpreted and archived.

Ranking: 1

Recurrent Project U.4.02: Implementation of legal aspects of conventions for which the Director General is depositary

Main outputs: The Agency's obligations under conventions for which the Director General is the depositary will be fulfilled through carrying out depositary functions, which include registration with the United Nations, preparation of certified copies, receiving signatures and instruments of ratification, succession and accession, and maintenance of the archive of original texts and status lists. Meeting of Contracting Parties and/or diplomatic conferences to review/consider amendments will be convened and serviced.

Ranking: 1

Recurrent Project U.4.03: Legal services to Member States

Main outputs: Responses will be provided to Member States' legal questions relating to the work of the Agency and to States' obligations under relevant international agreements. National legislative frameworks governing the safe and peaceful uses of nuclear energy in Member States will be enhanced through the provision of advice on or drafting of legislation, regional training courses and individual training.

Ranking: 1

Recurrent Project U.4.04: Inter-agency legal matters

Main outputs: Legal advice will be provided in the coordination and, where appropriate, standardization of policies, regulations and rules of the Agency and United Nations system organizations and other intergovernmental organizations.

Ranking: 3

Programme V. ADMINISTRATION AND GENERAL SERVICES

Rationale: The Agency requires sound financial planning and management and effective management of human resources, together with efficient administration and general support services to enable it to carry out its mandate.

Objective: To ensure efficiency and effectiveness in the planning and management of financial and human resources and the provision of general administrative and support services.

Outcome
— Service oriented, efficient and effective management of human and financial resources and of general support services.
Performance Indicators
— Improved satisfaction of staff and Member States concerning financial and human resources management. — Gains in efficiency and cost effectiveness of general support services.

Specific criteria for prioritization:

— First priority is given to the provision of support services essential for the implementation of Agency programmes.

— Second priority is given to activities intended to back up such services.

— Third priority is given to activities designed to increase the efficiency of the support services.

Subprogramme V.1. Financial Management

Rationale: Sound financial policies and management are required to effectively utilize the financial resources essential to the delivery of the Agency's programme, within the framework provided by the Statute, the Financial Regulations and Rules, and the decisions of the Policy-making Organs.

Objective: To ensure the continued confidence of Member States in the financial management of the Agency, and to deliver financial services to managers efficiently and effectively, in support of all Agency programmes.

Outcomes
— Continuing confidence by Member States and the Board of Governors that budgeting, financial planning, and financial administration of the Agency are conducted in a sound and efficient manner.

Outcomes (cont'd)
— Constructive proposals and regular financial information provided to senior management, the Board of Governors and Member States for transparency and decision making purposes as required.
— Continuous improvements to the procedures and systems supporting the financial activities of the Agency, with emphasis on a greater service orientation towards managers and streamlined financial processes to support the successful implementation of the Agency's programme.
Performance Indicators
— Timeliness and usefulness of budgetary and financial documents and reports; accuracy of forecasts.
— Degree of accessibility and use of Agency financial management and information systems.

Programmatic changes and trends: New initiatives will be introduced, including: streamlined business processes; greater financial planning flexibility and responsibility delegated from central management to programme management; staff reorganization; and a greater service orientation.

Resource changes and trends: The proposed resources for Subprogramme V.1 amount to €6 894 500 in 2006, reflecting a decrease in the budget of €171 000, or 2.4%, compared with 2005, with no change in 2007 compared with 2006.

The decrease is due to a reduction in staffing resources as a result of restructuring; funds were reallocated to Subprogramme V.2.

Financial resources (2005 prices)

V.1	2005	2006	2007
Reg. budg.	7 065 500	6 894 500	6 894 500

Projects

Recurrent Project V.1.01: Direction

Main outputs: Financial advice to Member States, Board of Governors, the Director General and other senior staff members will be provided. Financial policy guidance will be given in the course of supervising the efficient and effective functioning of systems of budgeting, accounting, cash management, assessment of contributions, production of payroll, cost control and financial systems support. As required, clearances will be given to procedures and documentation necessary to properly execute these functions. Changes to existing financial policies and practices will be proposed as needed.

Ranking: 1

Recurrent Project V.1.02: Budgeting, accounting, control and reporting

Main outputs: Documents will be prepared for governing bodies for decisions on budgetary and financial policy, as well as information papers on diverse topics (financial situation, status of collection of assessed contributions, etc.). The accounts duly certified by the External Auditor will be issued. Assistance and advice to senior management and programme managers on financial decision making, control of expenditure allotments and issuance of financial performance reports will be provided. Letters concerning assessed and voluntary funds collection and receipt of funds from Member States and other entities will be issued. Regular and on demand reports produced on extrabudgetary funding. Any cash surplus will be returned to Member States in accordance with the Financial Regulations.

Ranking: 1

Recurrent Project V.1.03: Payment processing and treasury

Main outputs: Cash management and cash forecasting requirements will be performed. Investment policy support will be provided to the Investment Committee, and investments managed according to approved policies. Salary payments will be made to over 2000 staff members. Travel arrangements and expense reimbursement for Agency staff and non-staff, and payment of over 37 000 invoices in accordance with financial guidelines will be made. Interest from the Agency's investments will be received.

Ranking: 1

Recurrent Project V.1.04: Financial systems support

Main outputs: Regular reports from the Agency's Financial Information Management System and other financial systems will be provided to relevant Agency staff. System upgrades to enhance the financial system will be introduced as and when appropriate. User manuals will be prepared and training courses conducted to enable Agency staff to use financial information management systems effectively.

Ranking: 2

Subprogramme V.2. Human Resources Management

Rationale: Human resources are one of the most valuable assets to the successful operation of any organization. Effective human resources management and continuous fostering of a high calibre workforce are a core responsibility of the Agency, which are ultimately reflected in the quality and efficiency of programmes and services delivered to Member States. Particular efforts need to be devoted to recruit and retain, when appropriate, staff of the highest competence and integrity and promote geographical diversity and gender equality.

Objectives:

— To ensure the provision of required human resources to effectively support the implementation of the Agency's programmes.

— To improve human resources policies, employment conditions and working environment within the framework of the UN Common System while maintaining effective control over staff costs.

Outcomes
— Availability of appropriate levels of staff with the necessary competencies and work experience, employed on the basis of regularly improved human resources policies, employment conditions and working environment.
— Improved human resources processes through the revision of procedures and provision of enhanced and additional on-line human resources services and applications.
Performance Indicators
— Completion rate of project activities.
— Time needed to fill vacancies. — Number of automated/enhanced human resources processes and applications.

Programmatic changes and trends: A major change, which is expected to yield first results during the 2006–2007 biennium, is the modernization of the UN Pay and Benefits system aiming at improving employment conditions. This is to be achieved in the long run by linking pay to performance, rewarding staff in a competitive and fair manner on the basis of merit and competence, and by encouraging staff development. During this budget cycle, the Agency will actively participate in UN system-wide reform process to contribute to the establishment of a viable and effective system, which is expected to attract and retain highly qualified staff and satisfy programmatic goals.

Within this context, competency-based management will be introduced and leadership skills strengthened, both of which should contribute to the quality enhancement of the Agency's programmes.

Finally, increased focus will be placed on the re-engineering and/or enhancement of human resources processes, making an increasing number of services available on-line and thereby freeing staff time. This efficiency gain will allow human resources

specialists to move from a process driven operation to one which focuses on quality advice tailored to the special needs of its customers. It is expected that these changes will lead to improved management of human resources and reinforce the one-house approach.

Resource changes and trends: The proposed resources for Subprogramme V.2 amount to €5 812 000 in 2006, reflecting an increase in the budget of €171 000, or 3%, compared with 2005, with no change in 2007 compared with 2006.

The increase is required to cover salary survey support costs, increases in the Agency's share to the UN Common System inter-agency activities and the need to strengthen the Agency's training programme, with particular emphasis on leadership and managerial competence, as well as specific skill enhancement courses. The increase is covered by the reallocation of funds from Subprogramme V.1.

Financial resources (2005 prices)

V.2	2005	2006	2007
Reg. budg.	5 641 000	5 812 000	5 812 000

Projects

Recurrent Project V.2.01: Direction

Main outputs: Liaison will be established with Member States for the provision of information and clarification of policy, process and specific issues on human resources matters. Reports will be made available to governing bodies on the implementation of relevant human resources directives. The Agency will participate in inter-agency forums, such as the International Civil Service Commission (ICSC), the Chief Executives Board/Human Resources (CEB/HR) Network and the United Nations Joint Staff Pension Board (UNJSPB). Advice will be provided to senior management and programme managers on human resources issues. Following the streamlining of processes and procedures and the development/enhancement of IT system modules, a simplified and integrated human resources planning and recruitment system will be implemented. Services provided will be increasingly focusing on competency and customer based advice. Good staff/management relations will be fostered, as well as the development/implementation of effective means of conflict resolution.

Ranking: 1

Recurrent Project V.2.02: Human resources planning

Main outputs: Advice, training and assistance will be given in the development of customer tailored solutions to human resources planning issues. An integrated human resources planning and classification system will be implemented and enhanced on a continuing basis. Additional human resources planning tools (software application) with required linkages to the recruitment system will be developed. Organizational structures which reflect balanced levels of work allocation appropriate to programme needs will be established in cooperation with programme managers.

Ranking: 1

Recurrent Project V.2.03: Recruitment

Main outputs: Outreach approaches will be revised and appropriate recruitment sources established in cooperation with area specialists. A number of selection tools will be developed. The recruitment process lead-time will be shortened and procedures enhanced to provide for quality assurance to better satisfy customer needs.

Ranking: 1

Recurrent Project V.2.04: Staff administration

Main outputs: Appropriate action will be taken to ensure periodic updates of salaries, allowances and pensionable remuneration in accordance with the Staff Regulations and Rules and practices in the United Nations Common System. The full range of staff benefits and entitlements, including social security coverage, will be administered. Advice on the administration of employment conditions will be provided. Cases relating to the obligation of staff members and to questions of staff conduct will be resolved in collaboration with programme managers and Staff Council.

Ranking: 1

Recurrent Project V.2.05: Personnel management information

Main outputs: An effective Personnel Management Information System (PERMIS) will be maintained and continuously enhanced. New modules and features to support administrative processes will be developed. The security of the human resources database will be ensured. Standardized and ad hoc personnel related statistics, analyses and reports will be provided.

Ranking: 1

Recurrent Project V.2.06: Staff development and training

Main outputs: A training programme meeting the needs of the staff and the organization will be developed and implemented. Requirements resulting from the rotation principle or the life cycle length of a staff member within the organization will be given particular consideration to better tailor programmes. Special emphasis will be placed on the enhancement of the leadership and management skills.

The Learning Resources Centre will provide a versatile choice of materials, tools, discussion sessions, etc., all supporting a comprehensive training and staff development programme.

The performance management system will be further developed and improved to meet organizational needs, but also to support efforts undertaken by the UN Common System to establish a performance based pay system.

Ranking: 2

Recurrent Project V.2.07: Staff council

Main outputs: Regular staff/management dialogue relating to personnel policies and welfare will be fostered. Advice and resolution of conflicts will be addressed in a proactive, open and constructive manner. Conditions of employment within the United Nations Common System of salaries and allowances will be determined through participation in the inter-Agency staff representative body and United Nations administrative processes.

Ranking: 2

Recurrent Project V.2.08: Medical service

Main outputs: Medical services will be provided to staff of the Vienna-based organizations, including the implementation of the United Nations Common System Medical Standards. Advice will be provided to management on the handling of emergencies/special circumstances warranting preventive care and/or remedying action (epidemics, serious health matters, etc.), as well as on medical standards for recruitment, placement, disability, and entry to the Pension Fund.

Ranking: 1

Subprogramme V.3. General Services

Rationale: General administrative and logistical services are needed to enable programme managers and staff at large to perform their function and implement programmatic activities. The general services needed range from security, business continuity, risk management and insurance; travel and transportation; import and export matters; procurement and supplies; facilities management services at Headquarters and the laboratories to records management matters as well as the management of the Commissary at the Vienna International Centre (VIC).

Objective: To enable the Agency to deliver programmes through the provision of efficient and effective general administrative and support services.

Outcomes
— Maintained and improved general services to the Agency.
— Maintained and improved level of maintenance, security and safety at the VIC premises and implementation of travel.
Performance Indicators
— Improved satisfaction of staff and Member States with assistance in programme implementation and the quality of customer service provided as evaluated by reviews and surveys.
— Gains in efficiency and effectiveness of facilities, security and travel services. — Number of documented efficiency measures implemented in processes through improvements and expansion of computerized and automated systems.

Programmatic changes and trends: The use of modern technologies and tools as a means to further streamline operations will be kept under continuous review.

Security enhancements at the VIC to conform to Headquarters Minimum Operating Security Standards will receive considerable attention. In addition to capital investments, recurrent costs will also be incurred. The Agency Business Continuity Plan will need testing and updating to counteract interruptions to the essential activities of the Agency and to protect these essential activities from the effects of major failures or emergencies.

The delayed asbestos removal project of the host Austrian Government and the systematic rationalization of office space will be major undertakings.

Best practices in the area of archives and records management will be kept under continuous review, bringing them in line with international standards. The management of electronic records will be improved with the implementation of a new computerized system to be widely used throughout the Agency.

A significant increase in requests for videoconference services for meetings and interviews, as well as increased requirements for many facilities management resources — more office space, storage and more frequent use of multimedia technicians — is expected. There will be more involvement in the facilities management and infrastructure development for the regional offices and laboratory sites.

Resource changes and trends: Resources remain constant in both years compared with 2005.

The efficiency gains realized from this subprogramme have been retained there and will be used to cover additional Buildings Management Services (BMS) projects being undertaken more cost effectively in conjunction with asbestos removal.

Resources for the Agency's share of recurring costs for security enhancements at Agency offices and laboratories outside Vienna will be funded through a special appropriation (estimated at €2.43 million per annum).

Financial resources (2005 prices)

V.3	2005	2006	2007
Reg. Budg.	22 649 300	22 649 300	22 649 300

Projects

Recurrent Project V.3.01: Direction and coordination

Main outputs: This project will result in cost effective delivery of services. An updated Agency Business Continuity Plan will be made available. Inputs to UN Security Services will be provided. Reports on measures implemented and statistics will be issued.

Ranking: 1

Recurrent Project V.3.02: BMS — common service

Main outputs: The VIC will be operated and maintained in an adequate and cost effective manner through Buildings Management Services provided by UNIDO on behalf of all Vienna based organizations. An office environment and necessary facilities that meet acceptable standards will be provided.

Ranking: 1

Recurrent Project V.3.03: UNSSS — common service

Main outputs: Enhanced safety and security will be provided for staff, delegates and visitors to the VIC in conformity with established standards and guidelines.

Ranking: 1

Recurrent Project V.3.04: Facilities management services

Main outputs: Agency facilities — offices, meeting rooms, storage rooms, laboratories — and multi-media and videoconference services, meeting overall Agency requirements, will be made available. Implementation of Asbestos Removal Project and the Space Efficiency Programme will contribute to an efficient, safe and healthy working environment.

Ranking: 1

Recurrent Project V.3.05: Archives and records management services

Main outputs: Best practices in the area of archives and records management, particularly international standards, will be utilized to preserve archival material. Electronic records will be managed using a new computerized system. Documents received will be delivered and mailed or otherwise dispatched.

Ranking: 1

Recurrent Project V.3.06: Travel and transportation services

Main outputs: The following services will be provided: processing of Travel Authorizations, ticket issuance, and general oversight of the Agency's contract with the travel management company; arranging of accommodation for staff and Missions, transport (shipments, household removals, use of official vehicles), the processing of entitlements relating to privileges and immunities of staff members and the organization.

Ranking: 1

Recurrent Project V.3.07: Operation of the commissary

Main outputs: Goods for the Commissary will be purchased and sold. Invoices will be checked.

Ranking: 1

Recurrent Project V.3.08: Procurement services

Main outputs: Procurement plans will be developed and implemented. Goods and services for the implementation of the Agency's programmatic activities will be delivered to the requestors. Office supplies and stationery will be delivered to staff upon request.

Ranking: 1

Programme W. OVERSIGHT SERVICES AND PERFORMANCE ASSESSMENT

Rationale: With the introduction of the results based approach to programme management, the Agency's programme managers have an increased responsibility and accountability for achieving the programme results in an environment characterized by reduced administrative procedures and constraints. In this context, it is incumbent on the Agency to provide oversight services and establish performance assessment tools that support sound corporate governance. Improvements in programme design and formulation can be achieved through lessons learned from performance assessment and evaluation of activities in the previous programme cycles. Systematic appraisal of results achieved is essential for full implementation of results based management.

These functions respond to the concerns of Member States to ensure that the resources provided are used responsibly, effectively and efficiently.

Objectives:

— To provide independent and objective assurances to the Director General, programme managers and Member States on the achievement of planned results and the judicious utilization of resources.

— To improve the Agency's management policies and practices, programme performance and accountability as a result of implementation of recommendations and follow-up to lessons learned of oversight services and performance assessment.

Outcomes
— Implementation of recommendations of audits, evaluations, reviews and follow-up to lessons learned from performance assessment.
— Efficiency gains in the delivery of the Agency's regular and technical cooperation programme based on recommendations of audits, evaluations, and performance assessments.
Performance Indicators
— Percentage of recommendations implemented from programme evaluation and internal audit.
— Expected and/or achieved cost savings and funds recovered.
Performance Indicators (cont'd)
— Percentages of findings and lessons learned from performance assessment incorporated in programme formulation.

Specific criteria for prioritization:

— First priority is given to the oversight and assessment activities.

— Second priority is given to activities related to central programme implementation monitoring.

— Third priority is given to training activities.

Subprogramme W.1. Internal Audit and Investigations

Rationale: The internal audit and investigation functions assist the Director General in implementing Financial Regulation 10.01 and fulfilling internal oversight objectives. The 2006–2007 biennium will be the third biennium where the Agency will have used results based management. To support this approach, the focus of internal audit will be on risk management. Audit plans will be designed to address the areas of highest risk and vulnerability to ensure that best value can be achieved from audit work.

Objectives:

— To provide independent and objective assurance to the Director General that the activities and operations of the Agency are carried out in compliance with established regulations, rules and policies, and that allocated resources are managed economically, effectively and efficiently to achieve the defined outcomes and objectives.

— To enhance a culture of sound governance and accountability.

— To improve the capacity of managers to identify and manage risk through audit findings, implementation of recommendations and good practices.

Outcomes
— Greater compliance with established regulations, rules, policies and procedures.
— Implementation of recommendations leading to an efficient and economical use of resources.

Outcomes (cont'd)
— Increased risk awareness and adequate and cost effective internal control system exercised by management at all levels.
— Prevalence of a control environment within a culture of accountability at all levels in the Agency and preventing violations or irregular activities.
Performance Indicators
— Percentage of audit recommendations implemented from those issued in the area of compliance.
— Percentage of recommendations implemented from those issued in the area of efficiency and economical use of resources.
— Number of measures taken as a result of audit recommendations aimed at enhancing risk management and internal control.
— Amount saved, costs recovered or losses prevented through results of audits and investigations.

Programmatic changes and trends: The internal audit and investigation functions will put more emphasis on supporting and assisting programme managers in reviewing their risk management systems, relevance, accuracy and reliability of the performance indicators and evaluating internal controls established for their operations.

In keeping with the Agency's Medium Term Strategy goal of attaining "excellence of management", increased emphasis will also be given to facilitating the enhancement of managers' capability to conduct their own risk assessment/management.

Given the rapidly changing nature of information technology and its increasing use for critical management functions within the organization, audit will devote more time and resources to the review of the accuracy of information, security, efficiency and effectiveness in this area.

Resource changes and trends: The proposed resources for Subprogramme W.1 amount to €1 027 600 in 2006, reflecting an increase in the budget of €6 000, or 0.6%, compared with 2005, with no change in 2007 compared with 2006.

Financial resources (2005 prices)

W.1	2005	2006	2007
Reg. budg.	1 021 600	1 027 600	1 027 600

Projects

Recurrent Project W.1.01: Audit and investigation

Main outputs: In the biennium twenty audit and investigation reports containing all findings and recommendations will be prepared. A systematic review will be conducted of the implementation of recommendations from audits and investigations. The rate of response and details of the level of implementation will be reported to the Director General.

Ranking: 1

Recurrent Project W.1.02: Training on risk management

Main outputs: Ten managers selected from different major programmes will be trained in risk management and techniques on how to identify, manage, mitigate and monitor risks.

Ranking: 3

Recurrent Project W.1.03: Participation in Agency systems development and management improvement

Main outputs: Input in the form of studies and recommendations on controls will be provided to management improvement process, including system development.

Ranking: 2

Subprogramme W.2. Programme Evaluation

Rationale: As one of the three key components of the Agency's results based programme management process, programme evaluation provides an objective validation of actual programme results. Programme evaluations examine Agency programmes to validate whether they are achieving their objectives and meeting Member States needs and priorities in terms of relevance, efficiency and effectiveness. The programme management cycle involves the continual interaction of planning, implementation and evaluation.

Evaluation will contribute to the programme management cycle by improving planning and implementation and providing useful tools for effective monitoring.

Objective: To provide assurances to the Director General, senior management and Member States, through in-depth and systematic evaluation of regular and TC programme activities, about the achievement of objectives, sustainability, relevance, effectiveness and efficiency.

Outcome
— Programme improvements as a result of the implementation of evaluation recommendations and lessons learned.

Performance Indicator
— Percentage of evaluation recommendations implemented.

Programmatic changes and trends: Evaluation will ascertain programme outcomes and impact as well as the factors affecting performance, i.e. why and how the overall results were, or were not, achieved.

The results of the evaluations close the cycle of programme management and provide inputs for the next cycle (in form of recommendations and lessons learned) to improve the programme planning and implementation.

An increased emphasis will be given to facilitating the enhancement of Agency managers' capability to conduct their own self–evaluations as part of their own on-going management functions. Attention will also be given to increasing the capability of interested Member States in adopting similar practices in order to improve their own programme activities.

Resource changes and trends: The proposed resources for Subprogramme W.2 amount to €669 600 in 2006, reflecting a decrease in the budget of €6 000, or 0.9%, compared with 2005, with no change in 2007 compared with 2006.

Financial resources (2005 prices)

W.2	2005	2006	2007
Reg. budg.	675 600	669 600	669 600

Projects

Recurrent Project W.2.01: Evaluation of technical cooperation activities

Main outputs: Evaluation reports, follow-up action plans and evaluation summaries will be finalized each year and presented to the Board of Governors through the Technical Assistance and Cooperation Committee. Evaluations are to be determined following the recommendation of that Committee.

Ranking: 1

Recurrent Project W.2.02: Thematic evaluation

Main outputs: Evaluation reports, follow-up action plans and evaluation summaries will be produced. Results of in-depth evaluations will be reported to the Board of Governors through the Programme and Budget Committee. Evaluation of the following areas will be conducted during the biennium:

— Innovative Nuclear Technologies
— Atomic and Nuclear Data
— Food Quality and Safety
— Water Resources
— Infrastructures, Information and Policies for Radioactive Waste Safety
— Safeguards Training
— Nuclear Fuel Issues and Information Systems
— Animal Production and Health
— Physical and Chemical Applications
— Nuclear Security
— Information Support for Strengthened Safeguards
— Public Information and Communication.

Ranking: 1

Recurrent Project W.2.03: Training of Member State counterparts and staff in conducting self-evaluation

Main outputs: Counterparts in Member States and Agency managers will be trained and supported using the self-evaluation tools developed.

Ranking: 3

Subprogramme W.3. Programme Implementation Monitoring and Performance Assessment

Rationale: The only way to ensure the achievement of projected results of the Agency's programmes in terms of planned outputs delivered, outcomes achieved and objectives reached, is to monitor the implementation of activities on a regular basis. This allows for corrective measures to be taken in a timely manner when normal conditions of programme implementation are perturbed by unforeseen external or internal factors, and also to provide Member States with mid-term progress report.

An integral part of results based management is also the assessment of the achievement of programme outcomes using performance indicators in order to ensure that the Agency's activities are having the desired effect in Member States in an efficient, effective and timely manner and in order to improve the design of programmes for future biennia. Programme monitoring and performance assessment are essential in this respect.

Objective: To provide assurances to Member States and senior management on the timely, efficient and effective achievement of outcomes and judicious utilization of resources through systematic programme implementation monitoring and performance assessment.

Outcome
— Use by programme managers of findings and lessons learned from programme implementation monitoring and performance assessment for adjustment of the programmes and improvement of the design of programmes of future biennia.
Performance Indicator
— Adjustments made during programme implementation and substantive changes introduced in programmes of future biennia.

Programmatic changes and trends: With two recurrent projects, work during the 2006–2007 biennium will focus on the consolidation of the methodology for programme performance assessment, particularly for collecting outcome data. Agency-wide automated programme implementation monitoring system will be interfaced with resource monitoring systems.

Resource changes and trends: The proposed resources for Subprogramme W.3 amount to €78 000 in 2006, reflecting an increase in the budget of €37 000, or 90.2%, compared with 2005, which represents an adjustment of staff time allocation. It is offset by a reduction of the same amount in Subprogramme U.2 (General Management and Programme Coordination).

Financial resources (2005 prices)

W.3	2005	2006	2007
Reg. budg.	41 000	78 000	78 000

Projects

Recurrent Project W.3.01: Programme implementation monitoring

Main outputs: A mid-term progress report will be issued. Factors influencing the implementation of the Agency's programme will be identified.

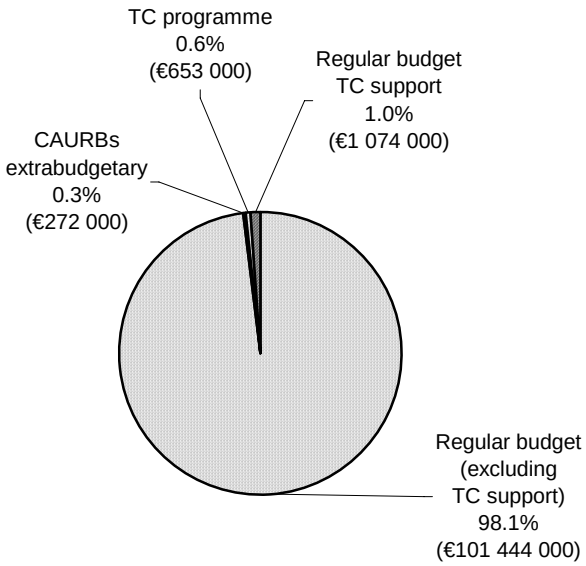
Ranking: 3

Recurrent Project W.3.02: Programme performance assessment

Main outputs: The Programme Performance Report for 2004–2005 will be issued in 2006. Refined methodologies for data collection, identification of baseline data, analyses and assessment will be available. Programme managers will be trained in the use of the refined methodologies.

Ranking: 1

Total Resources for Policy and General Management in 2006–2007 (including the TC programme)



	2006	2007	Total for biennium
Regular budget (excluding TC support)	50 722 000	50 722 000	101 444 000
Regular budget TC support	537 000	537 000	1 074 000
Subtotal regular budget:	51 259 000	51 259 000	102 518 000
CAURBs extrabudgetary	136 000	136 000	272 000
Funds from UN organizations	-	-	-
TC programme	326 000	327 000	653 000
TOTAL	51 721 000	51 722 000	103 443 000

The total resources for implementing Major Programme 7, which are illustrated (at 2006 prices) in the table and chart above, amount to €103 443 000 for the biennium. Regular budget resources constitute €102 518 000 or 99.1% of this amount. The regular budget resources remain constant in both years compared with the adjusted budget for 2005 and are in line with the 'Package Proposal'.

An amount of €1 074 000 of regular budget funding, or 1.0% of total resources relates to support of the technical cooperation programme. Approximately €1 048 000 of this amount will be used for the evaluation of the technical cooperation programme (Subprogramme W.2 — Programme Evaluation) and a further €26 000 to support technical cooperation programming worth €653 000 in the area of legislative assistance (Subprogramme U.4).

Extrabudgetary funding expected for the biennium accounts for a further €272 000 or 0.3% of total resources, all of which relates to the funding of CAURBs. There is a further €1 400 000 for CAURBs (listed in Table 27) for which there is no funding currently available from any source.

Summary data on the regular budget proposals, on extrabudgetary resources expected to be available, and on CAURBs for which no funding is available, are set out — by project, subprogramme and programme — in Table 25 at the beginning of this major programme. The table at the end of the major programme narrative shows the comparison of regular budget estimates, at 2005 prices, with the 2005 adjusted budget at the subprogramme level.

Major Programme 7

Major Programme 7 - Policy and General Management

Summary of Regular Budget Resources for the Biennium

Table 26

	Project / Subprogramme / Programme	2005 adjusted budget	Programme increase/(decrease)	%	2006 estimates at 2005 prices	Programme increase/(decrease)	%	2007 estimates at 2005 prices	Price increase %	2006 estimates at 2006 prices	2007 estimates at 2006 prices
U.1	Executive Management	3 419 000	-	-	3 419 000	-	-	3 419 000	0.9	3 450 800	3 450 800
U.2	General Management and Programme Coordination	1 642 200	(37 000)	(2.3)	1 605 200	-	-	1 605 200	0.7	1 616 900	1 616 900
U.3	Services for Policy-Making Organs	6 102 800	-	-	6 102 800	-	-	6 102 800	0.9	6 159 200	6 159 200
U.4	Legal Activities	2 165 000	-	-	2 165 000	-	-	2 165 000	0.9	2 184 700	2 184 700
Programme U - Executive Management, Policy-Making and Coordination		13 329 000	(37 000)	(0.3)	13 292 000	-	-	13 292 000	0.9	13 411 600	13 411 600
V.1	Financial Management	7 065 500	(171 000)	(2.4)	6 894 500	-	-	6 894 500	1.2	6 976 300	6 976 300
V.2	Human Resources Management	5 641 000	171 000	3.0	5 812 000	-	-	5 812 000	1.2	5 880 800	5 880 800
V.3	General Services	22 649 300	-	-	22 649 300	-	-	22 649 300	2.4	23 202 400	23 202 400
Programme V - Administration and General Services		35 355 800	-	-	35 355 800	-	-	35 355 800	2.0	36 059 500	36 059 500
W.1	Internal Audit and Investigations	1 021 600	6 000	0.6	1 027 600	-	-	1 027 600	0.5	1 032 300	1 032 300
W.2	Programme Evaluation	675 600	(6 000)	(0.9)	669 600	-	-	669 600	1.1	677 100	677 100
W.3	Programme Implementation Monitoring and Performance Assessment	41 000	37 000	90.2	78 000	-	-	78 000	0.6	78 500	78 500
Programme W - Oversight Services and Performance Assessment		1 738 200	37 000	2.1	1 775 200	-	-	1 775 200	0.7	1 787 900	1 787 900
Major Programme 7 - Policy and General Management		50 423 000	-	-	50 423 000	-	-	50 423 000	1.7	51 259 000	51 259 000

Major Programme 7 - Policy and General Management

Core Activities Unfunded in the Regular Budget
Table 27

	Project Title and Description of Activities		2006 CAURBs Unfunded	2007 CAURBs Unfunded
V.3.04	Facilities management services			
	V.3.04/10	*Infrastructure development plan and upgrading of facilities/alteration works within Agency premises at the VIC and laboratories and offices outside Vienna*	700 000	700 000
	Subprogramme V.3: General Services		700 000	700 000
Programme V. -	Administration and General Services		700 000	700 000
Major Programme 7 - Policy and General Management			700 000	700 000

ANNEX

Draft Resolutions

A. REGULAR BUDGET APPROPRIATIONS FOR 2006

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Regular Budget of the Agency for 2006 [1/],

1. Appropriates on the basis of an exchange rate of $1.00 to €1.00, an amount of €273 619 000 for the Regular Budget expenses of the Agency in 2006 as follows [2/]:

		Euro
1.	Nuclear Power, Fuel Cycle and Nuclear Science	26 679 000
2.	Nuclear Techniques for Development and Environmental Protection	30 436 000
3.	Nuclear Safety and Security	22 272 000
4.	Nuclear Verification	106 336 000
5.	Information Support Services	15 992 000
6.	Management of Technical Cooperation for Development	15 396 000
7.	Policy and General Management	51 259 000
	Subtotal	268 370 000
8.	Special Appropriation for Security Enhancements	2 430 000
	Subtotal Agency Programmes	270 800 000
9.	Reimbursable Work for Others	2 819 000
	TOTAL	273 619 000

the amounts in the Appropriation Sections to be adjusted in accordance with the adjustment formula presented in the Attachment in order to take into account the exchange rate variations during the year.

2. Decides that the foregoing appropriation shall be financed, after the deduction of
   – revenues deriving from Reimbursable Work for Others (Section 9); and
   – Other Miscellaneous Income of €3 002 000 (representing €1 023 000 plus $1 979 000);

from contributions by Member States amounting, for an exchange rate of $1.00 to €1.00, to €267 798 000 (€211 089 000 plus $56 709 000), in accordance with the scale of assessment fixed by the General Conference in resolution GC(49)/RES/ ; and

3. Authorizes the Director General:

   (a) To incur expenditures additional to those for which provision is made in the Regular Budget for 2006, provided that the relevant emoluments of any staff involved and all other costs are entirely financed from revenues arising out of sales, work performed for Member States or international organizations, research grants, special contributions or other sources extraneous to the Regular Budget for 2006; and

   (b) With the prior approval of the Board of Governors, to make transfers between any of the Sections listed in paragraph 1 above.

1/ See document GC(49)/2.
2/ The Appropriation Sections 1–7 represent the Agency's Major Programmes.

ATTACHMENT

ADJUSTMENT FORMULA IN EURO

1.	Nuclear Power, Fuel Cycle and Nuclear Science	18 416 000	+	(	8 263 000	/R)
2.	Nuclear Techniques for Development and Environmental Protection	20 657 000	+	(	9 779 000	/R)
3.	Nuclear Safety and Security	17 200 000	+	(	5 072 000	/R)
4.	Nuclear Verification	83 008 000	+	(	23 328 000	/R)
5.	Information Support Services	13 506 000	+	(	2 486 000	/R)
6.	Management of Technical Cooperation for Development	12 843 000	+	(	2 553 000	/R)
7.	Policy and General Management	44 052 000	+	(	7 207 000	/R)
	Subtotal	209 682 000	+	(	58 688 000	/R)
8.	Special Appropriation for Security Enhancements	2 430 000	+		-	
	Subtotal Agency Programmes	212 112 000	+	(	58 688 000	/R)
9.	Reimbursable Work for Others	2 239 000	+	(	580 000	/R)
	TOTAL	214 351 000	+	(	59 268 000	/R)

Note: R is the average United Nations dollar-to-euro exchange rate which will be experienced during 2006

B. TECHNICAL COOPERATION FUND ALLOCATION FOR 2006

The General Conference,

Accepting the recommendation of the Board of Governors, which was noted by the General Conference in GC(48)/RES/7, that the target for voluntary contributions to the Agency's Technical Cooperation Fund for 2006 shall be $77 500 000,

1. Decides that for 2006 the target for voluntary contributions to the Technical Cooperation Fund shall be $77 500 000;

2. Notes that funds from other sources, estimated at $1 000 000, are expected to be available for that programme;

3. Allocates the amount of $78 500 000 for the Agency's Technical Cooperation programme for 2006; and

4. Urges all Member States to make voluntary contributions for 2006 in accordance with Article XIV.F of the Statute, with paragraph 2 of its Resolution GC(V)/RES/100 as amended by Resolution GC(XV)/RES/286 or with paragraph 3 of the former Resolution, as appropriate.

C. THE WORKING CAPITAL FUND IN 2006

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Agency's Working Capital Fund in 2006,

1. Approves a level in euro equivalent to $18 000 000 [1/] to be determined at the UN rate of exchange prevailing on 1 January 2006 for the Agency's Working Capital Fund in 2006;

2. Decides that the Fund shall be financed, administered and used in 2006 in accordance with the relevant provisions of the Agency's Financial Regulations [2/];

3. Authorizes the Director General to make advances from the Fund not exceeding €500 000 at any time to finance temporarily projects or activities which have been approved by the Board of Governors for which no funds have been provided under the Regular Budget; and

4. Requests the Director General to submit to the Board statements of advances made from the Fund under the authority given in paragraph 3 above.

1/ Please see document GC(49)/2 paragraph 119 of the Overview.
2/ INFCIRC/8/Rev.2.