

IAEA

International Atomic Energy Agency

MISSION REPORT
ON
THE INTEGRATED NUCLEAR INFRASTRUCTURE
REVIEW
(INIR)

Counterpart: Ministry of Energy

18 to 29 June 2012

Minsk, Republic of Belarus

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1. EXECUTIVE SUMMARY

In a letter dated 23 November 2011, the Permanent Mission of the Republic of Belarus to the International Organizations in Vienna requested the IAEA to carry out an Integrated Nuclear Infrastructure Review Mission (INIR). The Republic of Belarus (hereafter Belarus) also provided their self-evaluation report (in Russian and English) entitled: *Report on the Assessment of the National Nuclear Infrastructure of the Republic of Belarus*.

After preparatory activities, the INIR mission was conducted from 18 to 29 June 2012 in Minsk and represents an evaluation of the development status of the infrastructure issues described in the *Milestones in the Development of a National Infrastructure for Nuclear Power* (Nuclear Energy Series No. NG-G-3.1). The methodology for the evaluation is described in *Evaluation of the Status of National Nuclear Infrastructure Development* (Nuclear Energy Series No. NG-T-3.2). Given the status of Belarus's programme, the mission covered conditions for both Phases 1 and 2.

Belarus began its preparations for nuclear power in the 1980s but stopped after the Chernobyl accident. In July 2006, after strategic energy planning activities, Belarus decided to again consider the possibility of introducing nuclear power into the national energy mix. Subsequently on September 17, 2007, *The Concept of Energy Security of the Republic of Belarus* was approved by the Decree No. 433 of the President and included a plan to commission two nuclear power units with total power capacity of 2000 MWe by 2020. The Resolution of the Security Council of Belarus in 2008 approved the construction. The *Law on the Use of Atomic Energy in Belarus* was adopted on July 30, 2008 and provides the legal basis for safe nuclear power development. In 2009, the *Master Plan of Key Organizational Measures for Construction of Nuclear Power Plant* was adopted.

The mission team concluded that the Government of Belarus has made a clear commitment to a nuclear power programme, which is important to sustain the planning process and implement the project. Several key legal instruments have been adopted to establish the framework for a nuclear power programme since the decision was taken in 2008 to implement a nuclear power programme. Inter-Governmental Agreements have been signed between Belarus and the Russian Federation, followed by a contract agreement between the Directorate for Nuclear Power Plant Construction (DNPPC) and AtomStroyExport (ASE) for two VVER 1170MWe units that was signed in October 2011. Agreements for financing and preparatory construction works were also signed. The general contract for nuclear power plant (NPP) construction was under negotiation during the time of the mission

For coordination of the Belarus nuclear power programme, an Inter-Departmental Commission (IDC) was created that is headed by the First Deputy Prime Minister and reports to the Prime Minister. It includes members from all relevant ministries and organizations participating in the nuclear power programme. The IDC meets monthly to discuss the issues related to the nuclear power programme and reviews the work performed by each organization. The IDC is fully charged and authorized to prepare and oversee the execution of the national nuclear power programme.

The Ministry of Energy is responsible for implementation of the nuclear power project through the DNPPC. The Directorate will also be the operator of the nuclear plant. The regulatory body in Belarus is the Ministry of Emergency Situations (MES), which is

responsible for state supervision of nuclear and radioactive safety, security, and safeguards. The Department Nuclear and Radiation Safety (Gosatomnadzor-GAN) is a separate organization within MES and was established by Presidential Decree in 2007 to carry out certain regulatory functions in the field. The main organization responsible for scientific support of the nuclear power programme is the Joint Institute for Power and Nuclear Research of the National Academy of Sciences – Sosny.

The INIR mission was conducted in a cooperative and open atmosphere. It was noted that Belarus has made significant progress in the development of the necessary infrastructure for Belarus's nuclear power programme, namely: creation of an inter-departmental commission to coordinate among key national organizations for implementation of the nuclear power programme; creation of the DNPPC to implement the project and be the future operator, assignment of MES/GAN as the nuclear regulatory body, development of a plan for education and training of the human resources that will be required for the programme, and signing of a series of intergovernmental agreements with the Russian Federation for support in implementation of the nuclear power plant. As such, the INIR team concluded that Belarus has reached Milestone 1, having "made a knowledgeable decision" regarding its nuclear power programme. The INIR team also concluded that Belarus has mostly completed many of the conditions for Phase 2. However, some actions should be taken in the areas of national legislation and regulatory framework, strengthening of the regulatory body, nuclear security, and management systems. In order to assist Belarus in making progress in its infrastructure development, the INIR team made 17 recommendations. The main recommendations and conclusions in several areas are summarized below.

Relevant Legislation Should be Revised. Belarus has an extensive legislative framework governing nuclear activities. It includes presidential decrees, orders, and laws. However, the INIR team noted that the legislation regarding nuclear energy does not adequately address a number of issues such as radioactive waste and spent fuel management, the enforcement process, and civil liability for nuclear damage. Considering this, the relevant legislation should be revised.

The Regulatory Body Should be Strengthened. MES/GAN does not have sufficient processes and capacity to perform the necessary licensing and regulatory reviews and assessments of the construction license. Staffing and capacity of MES/GAN, as well as its technical support organization Sosny, should be enhanced to ensure that the development of the regulatory body keeps pace with the project schedule. Although workforce plans have been developed, the team found several indications that the regulatory body may not be able to perform necessary near term functions such as the review of a construction license application and the related activities. The INIR team recommended that MES/GAN identify the areas and related expertise that are needed to perform its activities in 2012/2013 and ensure that the necessary steps are taken to address this given the accelerated project schedule. MES/GAN may wish to consider contracting any needed technical support as soon as possible.

The Regulatory Framework to Support Licensing of NPP Should be Strengthened. Given the project timeline to issue a construction license in 2013, MES/GAN should prioritize and aggressively pursue the actions identified in its strategic planning document entitled: "*Strategy Action Plan and Cooperation Plan for Capacity Building to Enhance Gosatomnadzor of the Ministry for Emergency Situations 2012.*" The Action Plan identifies several actions that are needed to strengthen the regulatory framework in Belarus for the nuclear power programme. This should be done within the context of a comprehensive

management system and should focus on activities related to licensing and review of the first Belarusian nuclear power plant (NPP). At the functional level, MES/GAN should develop the responsibilities, process flows, and procedures for performing a review of the construction license application. Given the time constraints, it is the understanding of the INIR team that MES/GAN is planning to leverage the regulatory framework of the vendor country of origin. Additionally, the relevant technical support organizations (TSOs-such as Sosny) that will provide assistance to both: the operating organization and the regulatory body, should take measures to address potential conflict of interest.

Management Systems Should be Improved. The mission team found that the basic elements for managing the programme, such as organizational structures and procedures, are already in place within the relevant organizations of the DNPPC, MES/GAN, and Sosny. However, well developed process descriptions, measures to evaluate effectiveness, and other elements of a comprehensive management system have not yet been developed. The objective of such a comprehensive management system is to define all the requirements needed for managing the organization and to describe what actions are necessary to provide confidence that all these requirements will be met. This will ensure that health, environmental, security, quality and economic requirements are not considered separately from safety requirements.

A Facility Design Basis Threat (DBT) Should be Developed. Although a draft national DBT is under preparation that addresses the overall threats to Belarus, the DBT that is specific to the threats related to the NPP has not yet been developed. The INIR team has been informed that a DBT working group for the NPP will be established in the 4th quarter of 2012. The DBT for the NPP should be defined as soon as possible so that the security requirements can be provided to the vendor and incorporated into the design.

The INIR team also recognized good practices in the Belarus programme, which are worthy of attention as a model in the drive for excellence in infrastructure development. Some of them are:

- An Inter-Departmental Commission was established at a high level and meets regularly to guide the nuclear power programme and ensure the needed governmental support and coordination.
- The rapid implementation of the latest international standards (IAEA GSR Part 3) on radiation protection into its national regulations. This indicates a proactive and comprehensive approach to ensure the safety of its workers and public.
- An effective education programme to develop the required work force for the nuclear power programme that will help to ensure its safety and sustainability.
- A working group to enhance coordination amongst organizations with regulatory responsibilities in Belarus and improve the effectiveness and efficiency of nuclear regulations in Belarus.

The INIR mission evaluated the progress made by Belarus in the development of the national infrastructure to support a nuclear power programme, but did not assess in depth the quality of the infrastructure building activities as this requires specific targeted missions.

The team was led by the IAEA Director of Nuclear Power Division and comprised of IAEA staff from the departments of Nuclear Energy, Nuclear Safety and Security, Safeguards, and Technical Cooperation, as well as the Office of Legal Affairs. It also included international

experts recruited/selected by the IAEA in consultation with Belarus. A list of the INIR team members is provided in Attachment 2.

The INIR team wishes to thank Belarus for its invitation of the mission and cooperation during the mission. The experience of Belarus in applying the IAEA self-evaluation methodology to its nuclear power programme is valuable to the IAEA and will be taken into account by the IAEA in future updates.

The IAEA recommends that Belarus take the results of this mission into consideration when developing action plans for future activities. Such action plans should address the recommendations and suggestions in order to improve its preparedness for the next phase. The IAEA stands ready to assist in implementation of such action plans and in future reviews to evaluate the progress of Belarus's efforts.

2. INTRODUCTION

Belarus began preparations for nuclear power in the 1980s with plans for a 2000 MWe nuclear cogeneration plant located near Minsk and for construction of a 6000 MWe NPP in the Vitsebsk region. After the Chernobyl accident both of these projects were cancelled. During subsequent energy planning activities, nuclear power was again considered in July 2006 when the Government of Belarus included evaluation of the introduction of nuclear power into the national energy development plan.

Currently, electricity in Belarus is generated mainly by thermal power stations, with a minor contribution from small hydroelectric power stations. There is a heavy reliance on oil and natural gas imports, mostly from Russia, though local peat and wood are also used as fuel in the country. Belarus' power stations capacity totals 8,2 GW. Belarus imports electricity from the neighboring energy systems of Russia and Ukraine. The share of natural gas in the energy system for generation of electricity and heat for centralized heating systems has reached 95%, which significantly affects the country's energy independence. In this context, Belarus considers that the introduction of nuclear power can address this energy independence.

The Concept of Energy Security of Belarus, approved by the Decree of the President of Belarus № 433 of September 17, 2007, stipulated, among other activities, a plan for commissioning two nuclear power units with total power capacity of 2000 MWe by 2020. The governmental decision on construction of the nuclear power plants was approved by the Resolution of the Security Council No. 1 *On the Development of the Nuclear Power Sector in Belarus* in January 2008. Several laws of a general scope are related to nuclear activities and ionizing radiation. However, the Law on The Use of Atomic Energy Use enacted in July 2008 specifically addresses the use of nuclear energy in Belarus.

The Resolution for the *Master Plan of Key Organizational Measures for Construction of the Nuclear Power Plant* was approved by the Council of Ministers in January 2009. This plan determines the stages and timeframes of design work, scientific support activities, human resources training, necessary legal framework, and other infrastructure. For coordination of the Belarus nuclear power programme, an Inter-Departmental Commission (IDC) was created that is headed by the First Deputy Prime Minister and reports to the Prime Minister. It

includes members from all relevant ministries and organizations participating in the nuclear power programme. The IDC meets monthly to discuss the issues related to the nuclear power programme and reviews the work performed by each organization. The IDC is fully charged and authorized to prepare and oversee the execution of the national nuclear power programme.

Nuclear power plant project

After the political decision in 2008 to launch the nuclear power project, site selection studies and research by Belarus have demonstrated that potential sites for NPP location are available on the territory of Belarus. According to the results of studies and research, the Ostrovets site, located in Grodno region, has been defined as the priority one among three that were short-listed. The Krasnopolyansk and Kukshinov sites located in Mogilev region, are reserve sites.

An Environmental Impact Assessment (EIA) has been performed for the Belarusian nuclear power plant (NPP) site and the results of the assessment are presented on the DNPPC's website: <http://www.dsae.by>.

In May 2009, Belarus signed an intergovernmental agreement on cooperation in the field of atomic energy for peaceful purposes with the Russian Federation. This framework specified the main directions of cooperation in the development, design, construction and operation of nuclear power plants, nuclear fuel supply, nuclear and radiation safety, as well as scientific cooperation, training and others.

In September 2009, Belarus signed an agreement with AtomStroyExport to assist in a feasibility study for the construction of the Belarus' first nuclear power plant. The study also considered the investment options available to finance the proposed plant.

On March 15, 2011, the Agreement between the Government of Belarus and the Government of the Russian Federation on cooperation in NPP construction on the territory of Belarus was signed. Under this inter-governmental agreement, the Russian Federation will supply the nuclear fuel and take back the spent nuclear fuel. Belarus will be responsible for NPP licensing (for the site, design, construction, commissioning and operation). The agreement anticipates that Belarus local content (i.e., national industrial participation) will be between 30-50%.

On October 11, 2011, the Contract Agreement between the "Directorate for Nuclear Power Plant Construction" (DNPPC) and ASE was signed that stipulated the general provisions of the future general contract agreement for NPP construction. The NPP design selected was the improved light water reactors of the third generation of Russian VVER type (AES-2006) with capacity of 1170 MWe. The capacity of the units was chosen based on the structure of the Belarus power system, conditions of its operation modes, and redundancy. The project will be implemented on a "turnkey" basis with commissioning of the first unit in 2018, of the second in 2020.

On November 25, 2011, the Agreement between the Government of Belarus and the Government of the Russian Federation on the state export loan for construction of the NPP on the territory of Belarus was signed. The agreement stipulates for a loan up to 10 billion USD over 25 years in duration in order to realize the project. In March 2012, a contract for preparatory works on the Ostrovets site was signed.

A General Contract between the DNPPC and ASE for NPP construction was under negotiation at the time of the mission. The team was informed that the plant designer would be Atomenergoproect of St. Petersburg and OKB Gidropress would be the main constructor. In Belarus, the Design Scientific-Research Republican Unitary Enterprise “Belniplerienergoprom” will be responsible for coordination of the design and documentation for construction of the NPP.

The Ministry of Energy is responsible for implementation of the nuclear power project through the DNPPC. This is authorized under the *Master Plan of Key Organizational Measures for the Construction of the Nuclear Power Plant*. The DNPPC will also be the operator of the nuclear plant.

The 2008 Law on the Use of Atomic Energy assigned MES with regulatory functions in the field of nuclear safety and radiation protection. The Presidential Decree № 565, *Regulation on the Department for Nuclear Safety and Radiation Protection of the Ministry for Emergency Situations of the Republic of Belarus* (12 November 2007), identifies GAN as a sub-division of the MES with the functions of state oversight and monitoring of compliance in the field of nuclear safety and radiation protection.

The INIR team noted that the Resolution of the Council of Ministers of Belarus *On a Working Group to Coordinate the Implementation of State Supervision of Nuclear Power Plant Construction*. (No. 1791, 30 December 2011) provides MES/GAN with authority for coordination among organizations with various regulatory responsibilities, such as for environment and health. This is important to ensure efficient and effective regulations related to the nuclear power programme.

The organization responsible for scientific support of NPP construction activities is the Joint Institute for Power and Nuclear Research – Sosny of the National Academy of Sciences. Figure 1 shows the key governmental authorities dealing with nuclear affairs in Belarus.

KEY NUCLEAR STATE AUTHORITIES IN BELARUS

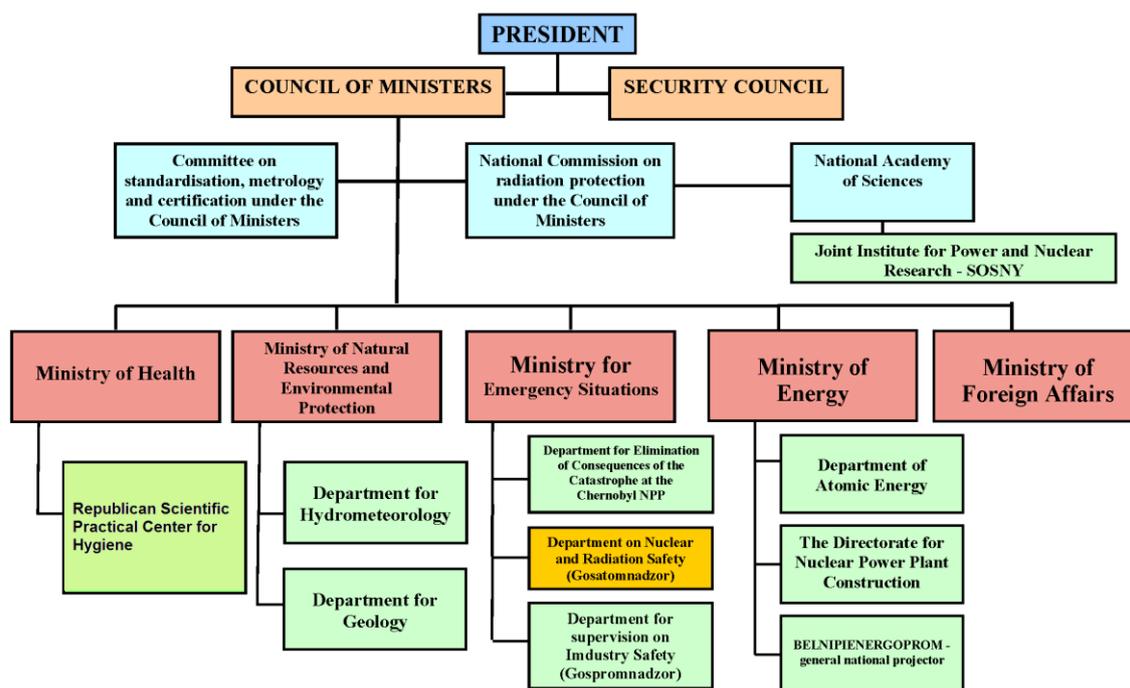


Fig. 1. Key governmental authorities dealing with nuclear affairs in Belarus

Relevant Previous Activities with IAEA

There has been cooperation with the IAEA in the form of two limited siting missions in 2008 and one EPREV Mission to assess national capabilities in Belarus in October 2010. The national hazard response system has been established based on dedicated emergency and management systems. Available resources (both technical and personal/professional) for response to emergency situations are high in the country because Belarus has a long experience with management of radiological consequences after the Chernobyl accident and the special arrangements are reflecting the situation in this area.

Belarus has also been active in the IAEA's Technical Cooperation Programme with national projects in nuclear power infrastructure development, human resource development and NPP staff training programmes, and strengthening the effectiveness of the regulatory authority.

INIR Mission

Belarus formally requested an INIR mission in a letter dated 23 November 2011. This was accompanied with an electronic copy (in Russian) of the National Report on the Assessment of the National Nuclear Infrastructure of Belarus. The Agency requested that the report be translated into English, which was provided on February 21, 2012.

In response to this request, a pre-INIR meeting was conducted on April 17, 2012 between the IAEA and the main counterparts from Belarus, including the Deputy Minister of Energy. During this meeting the terms of reference and main activities for the INIR mission were fixed.

The INIR mission was conducted from 18 to 29 June 2012 in Minsk. The mission represents an evaluation of the development status of the infrastructure issues described in the *Milestones in the Development of a National Infrastructure for Nuclear Power* (Nuclear Energy Series No. NG-G-3.1) applying the holistic approach described in *Evaluation of the Status of National Nuclear Infrastructure Development* (Nuclear Energy Series No. NG-T-3.2).

Given the status of Belarus's programme, the team reviewed the conditions for both Phases 1 and 2. The team was led by the IAEA – Director of Nuclear Power and comprised designated IAEA staff from the departments of Nuclear Energy, Nuclear Safety and Security, Safeguards, and Technical Cooperation, as well as the Office of Legal Affairs and international experts recruited/selected by the IAEA in consultation with Belarus (INIR team members are provided in Attachment 2). The INIR mission was conducted under Technical Cooperation Project BYE2004, “Developing Nuclear Power Infrastructure and Staff Training System for a Nuclear Power Programme”

3. OBJECTIVES OF THE MISSION

The main objectives of the INIR missions are:

- Evaluation of the development status of the infrastructure issues described in the *Milestones in the Development of a National Infrastructure for Nuclear Power*, IAEA Nuclear Energy Series No. NG-G-3.1, applying the holistic approach described in the *Evaluation of the Status of National Infrastructure Development*, IAEA Nuclear Energy Series No. NG-T-3.2.
- Identification of the areas needing further attention during the building of the national nuclear infrastructure in Belarus.
- Assistance to Belarus in preparation of an Action Plan to address areas for further improvement, which will be prepared by Belarus.

4. SCOPE OF THE MISSION

The mission focused on the status of the infrastructure conditions in Belarus covering all of the 19 issues identified in the IAEA Milestones publication in a comprehensive and holistic way. More specifically it included:

- A review of the current status of infrastructure development in Belarus.
- Recommendations and suggestions for further development of the infrastructure.

The INIR mission utilized the following techniques:

- a) Review of documents, both prior to the mission as part of preparation and during the mission. The review concentrated on the process to introduce nuclear power and did not

go into great depth to evaluate the quality of the planning and infrastructure building activities. (see Attachment 3: References)

- b) Discussions with representatives of the appropriate individuals and organizations in Belarus (see Attachment 2)

5. WORK DONE

Prior to the mission, the INIR team reviewed the report entitled “Evaluation of the National Nuclear Infrastructure of the Republic of Belarus” (hereafter referred to as the Self-Evaluation Report) and supporting materials. Input was sought from IAEA staff members with relevant expertise. Several INIR mission team meetings were conducted prior to the mission, including full team meetings in Vienna on 15 June 2012 and Minsk on 17 June 2012, to discuss the team’s initial views on the infrastructure status.

The mission was conducted from 18 to 29 June 2012 for phases 1 and 2. The mission was coordinated for Belarus by the Ministry of Energy (MoE). The meetings were held at the MoE offices in Minsk. The main interviews were conducted over seven days with two additional days for individual meetings between experts of the INIR team and their counterparts related to specific issues. The preliminary draft report was prepared and discussed with the counterparts. The mission results were presented to the Deputy Minister of Energy and senior officials in an exit meeting on 29 June 2012 and the preliminary draft report was delivered to the counterpart after the exit meeting.

The IAEA reference materials NG-G-3.1 and NG-T-3.2 were written with a competitive bidding process and turnkey contracting approach in mind. In Belarus, an Intergovernmental Agreement has been signed in lieu of a competitive process. The contracting approach will be a turnkey. In order to provide Belarus with meaningful advice and recommendations and for the purposes of the INIR mission, the mission team interpreted Milestone 2 “ready to invite bids” as “ready to negotiate the contract.” References to bid invitation specifications were interpreted as “specifications” for negotiating with a sole vendor.

The results of the mission are summarized in Section 6 and presented, in tabular form in Section 8 for each of the 19 Infrastructure issues in Phases 1 and 2. Attachment 1 provides the evaluation results for each issue for Phases 1 and 2. The “basis of evidence” for each issue as described in the IAEA’s report NG-T-3.2, *Evaluation of the Status of National Nuclear Infrastructure Development*, is identified in the left hand column. The INIR team made observations based on the evaluation for each condition to determine the progress towards Milestone 1 or 2. The INIR team identified gaps and made recommendations and suggestions, as well as identified good practices in some nuclear infrastructure area.

6. MAIN CONCLUSIONS

The INIR mission was conducted in a cooperative and open atmosphere with participation from the main organizations in Belarus responsible for the nuclear power programme, in particular the Ministry of Energy, the Directorate for Nuclear Power Plant Construction (DNPPC), the Ministry of Emergency Situations, the Department of Nuclear and Radiation

Safety (Gosatomnadzor), the Joint Institute for Power and Nuclear Research – Sosny, the Ministry of Health, the Ministry of Environment, the State Production Association – Belenergo, the Ministry of Economy, the Ministry of Internal Affairs, and the Ministry of Foreign Affairs. A full list of participants can be found in Attachment 2.

The INIR team wishes to thank Belarus for providing extensive documentation in advance of and during the mission, and translating key documents into English.

The INIR team noted that Belarus has made significant progress since the decision to embark on a nuclear power programme in 2008 in the development of the necessary infrastructure for its nuclear power programme. This infrastructure is needed to support the activities related to the nuclear power project planned at the Ostrovets site. The team took note in particular that Belarus has developed extensive capabilities in radiation protection and environmental remediation due in part from the consequences of the Chernobyl accident and its major effects on Belarus territory that necessitated a decisive response and remediation programmes by the government. Belarus also previously operated a research reactor and other activities related to nuclear power and the resulting knowledge and experience is still partially available in the Sosny Institute, which is one of the main technical support organizations supporting the nuclear programme.

The team discovered that from the time the Self-Evaluation Report was prepared until the time INIR mission was conducted, several developments had taken place (such as the draft *Strategy Action Plan and Cooperation Plan for Capacity Building to Enhance Gosatomnadzor of the Ministry for Emergency Situations, 2012*). This additional information was taken into account in formulating the conclusions and recommendations of this report.

The INIR team concluded that the Government of Belarus has made a clear commitment to a nuclear power programme, which is important to sustain the planning process and implement the project. Several key pieces of legislation have been promulgated to provide the framework for a nuclear power programme since the decision was taken in 2008 to implement a nuclear power programme. An Inter-Governmental Agreement was signed between Belarus and the Russian Federation in March 2011, followed by a contract agreement between the DNPPC and Atomstroyexport for two VVER 1170MWe units in October 2011. Agreements for financing and preparatory construction works were also signed. The general contract for NPP construction was under negotiation during the time of the mission.

The team concluded that Belarus has reached Milestone 1, having “made a knowledgeable decision” regarding its nuclear power programme. The INIR team also concluded that Belarus has mostly completed many of the conditions of Phase 2. However, some actions should be taken in the area of legislative and regulatory framework, strengthening of the regulatory body, nuclear security, and management systems.

In order to assist Belarus in making progress in its infrastructure development, the INIR team made 16 recommendations and 22 suggestions. The INIR team also identified 10 good practices. The key recommendations are summarized as follows:

Relevant Legislation Should be Revised. Belarus has an extensive legislative framework governing nuclear activities. It includes presidential decrees, orders, and laws. However, the INIR team noted that the legislation regarding nuclear energy does not adequately address a number of issues such as radioactive waste and spent fuel management, the enforcement

process, and civil liability for nuclear damage. Considering this, the relevant legislation should be revised.

The Regulatory Body Should be Strengthened. MES/GAN does not have sufficient processes and capacity to perform the necessary licensing and regulatory reviews and assessments of the construction license. Staffing and capacity of MES/GAN, as well as its technical support organization Sosny, should be enhanced to ensure that the development of the regulatory body keeps pace with the project schedule. Although workforce plans have been developed, the team found several indications that the regulatory body may not be able to perform necessary near term functions such as the review of a construction license application and the related activities. The INIR team recommended that MES/GAN identify the areas and related expertise that are needed to perform its activities in 2012/2013 and ensure that the necessary steps are taken to address this given the accelerated project schedule, MES/GAN may wish to consider contracting of any needed technical support as soon as possible.

The Regulatory Framework to Support Licensing of NPP Should be Strengthened. Given the project timeline to issue a construction license in 2013, MES/GAN should prioritize and aggressively pursue the actions identified in its strategic planning document entitled: “Strategy Action Plan and Cooperation Plan for Capacity Building to Enhance Gosatomnadzor of the Ministry for Emergency Situations 2012.” The Action Plan identifies several actions that are needed to strengthen the regulatory framework in Belarus for the nuclear power programme. This should be done within the context of a comprehensive management system and should focus on activities related to licensing and review of the first Belarusian NPP. At the functional level, MES/GAN should develop the responsibilities, process flows, and procedures for performing a review of the construction license application. Given the time constraints, it is the understanding of the INIR team that MES/GAN is planning to leverage the regulatory framework of the vendor country of origin. Additionally, the relevant technical support organizations (TSOs-such as Sosny) that will provide assistance to both the operating organization and the regulatory body, should take measures to address potential conflict of interest.

Management Systems Should be Improved. The mission team found that the basic elements for managing the programme, such as organizational structures and procedures, are already in place within the relevant organizations of the DNPPC, MES/GAN, and Sosny. However, well developed process descriptions, measures to evaluate effectiveness, and other elements of a comprehensive management system have not yet been developed. The objective of such a comprehensive management system is to define all the requirements needed for managing the organization and to describe what actions are necessary to provide confidence that all these requirements will be met. This will ensure that health, environmental, security, quality and economic requirements are not considered separately from safety requirements.

A Facility Design Basis Threat (DBT) Should be Developed. Although a draft national DBT is under preparation that addresses the overall threats to Belarus, the DBT that is specific to the threats related to the NPP has not yet been developed. The INIR team has been informed that a DBT working group for the NPP will be established in the 4th quarter of 2012. The DBT for the NPP should be defined as soon as possible so that the security requirements can be provided to the vendor and incorporated into the design.

The INIR team also recognized some good practices, which are worthy of attention as a model in the drive for excellence in infrastructure development:

Good Practices

Formation of the Inter-Departmental Commission. The Inter-Departmental Commission, which is functioning as the Nuclear Energy Programme Implementing Organization (NEPIO) is comprised of senior level officials from relevant ministries and organizations. The IDC meets at least once a month and considers the progress and issues related to the nuclear power programme and elevates the necessary actions to the proper level within the government for prompt attention. The high level authority to which it reports, the full participation by relevant ministries, and the frequency of its meetings can facilitate the swift resolution of any issues and is a model of good practice.

Rapid adoption of the latest radiation protection standards. Radiation protection of the population is an important goal in Belarus and is maintained at a high level with a clear commitment for continuous improvement. The INIR team has learned that the latest international standards (IAEA GSR Part 3) on radiation protection have already been incorporated into the Belarus programme in first half of 2012. This is expected to contribute to an enhanced level of protection of the population and to a safe use of nuclear energy in the country.

Establishment of an effective education programme. Belarus has established a very effective education programme to develop the required work force for the nuclear power programme. Various Universities and other educational institutions are providing students with the knowledge and skills that are relevant and needed to support the national nuclear power programme. This minimizes the need for job specific training and is considered a model of good practice.

Good coordination between regulatory authorities. The INIR team noted that a working group for coordination amongst organizations with regulatory responsibilities has been established by decree for the nuclear power plant programme. This decree provides MES/GAN with regulatory authority for coordination and is considered a model of good practice.

The following are the detailed recommendations, suggestions and good practices from the INIR mission.

Recommendations

R-2.1 No. 1

In consideration of its review of the legislative framework [R-5.2 No. 1], Belarus should consider formulations that are fully consistent with the IAEA fundamental safety principles – specifically assigning prime responsibility to the operator. (Phase 2)

R-2.1 No 2.

MES/GAN should expedite implementation of the existing draft Technical Code of Practice that addresses potential conflict of interest in the provision of technical support to both regulatory body and operating organization. Further, Sosny and other technical support organizations should establish measures to minimize the possibility of conflict of interest regarding the provision of support to both operating organization and regulatory body. (Phase 2)

R-3.6 No. 1

Belarus organizations supporting or supervising the nuclear power programme should improve their understanding of development and implementation of Management Systems according to IAEA GS-R-3 including the setup of the most relevant process descriptions related to the nuclear power plant operation and consider training activities such as workshops with IAEA or other experts. (Phase 2)

R-5.2 No. 1.

Considering that a number of issues such as the management of radioactive waste and spent fuel, civil liability for nuclear damage, and the enforcement process are not adequately addressed, the relevant legislation should be revised. (Phase 2).

R-6.3 No. 1

The preliminary version of DIQ “pre-construction phase” should be submitted to the IAEA through the ordinary safeguards channels. (Phase 2)

R-6.4 No. 1

The analysis of adequacy, consistency of the existing and development of the necessary new regulations which would allow full scope implementation of CSA and AP requirements, as applicable, should be completed (and reviewed by the IAEA, upon request). (Phase 2)

R-7.1 No. 1

Belarus should provide the necessary human and financial resources to allow MES/GAN to perform its supervisory obligations related to the licensing and review and assessment of the first Belarusian NPP. Funding provisions should also include any necessary contractual support services. (Phase 2)

R-7.1 No. 2

MES/GAN should prioritize and expeditiously pursue the Actions presented in draft MES/GAN Action Plan, especially those related to licensing and review and assessment of first Belarusian NPP. (Phase 2)

R-7.1 No. 3

MES/GAN should finalize regulations to support construction license application review process. (Phase 2)

R-7.1 No. 4

Belarus should finalize the necessary revision to relevant Decree of the President of Belarus (No 322) to provide necessary legal authority to carry out supervision/oversight activities. (Phase 2)

R-10.1 No. 1

The Workforce planning in MES/GAN and its TSOs (mainly Sosny), should be urgently and thoroughly reviewed and updated, taking in consideration the near term plans of issuing a construction license in 2013 as well the international training projects scheduled concurrently for 2012-2014. Based on the results, subsequent activities for identification, funding, and contracting of external support could be initiated. (Phase 2)

R-10.1 No 2

The staffing of the Regulatory Body with graduates provided by the State Universities and other educational institutions from 2012 onwards should become a high priority in the Human Resource action plans of Belarus. (Phase 2)

R-11.1 No. 1

MES/GAN should complete a statement/strategy of regulator policy regarding availability of information to the public for the purpose of transparency and building trust in the regulatory body and for the public's perception of safety of Belarus's nuclear power programme. (Phase 2)

R-15.2 No. 1

The facility Design Basis Threat (DBT) for the NPP should be defined. (Phase 2)

R-15.7 No. 1

A programme for development of strong security culture should be developed and implemented in all key organizations. (Phase 2)

R-17.1 No. 1

The government of Belarus should endorse the Strategy of radioactive waste management. (Phase 2)

Suggestions

The INIR team also made 22 specific suggestions to support continued improvement and strengthening of Belarus programme:

S-2.1 No. 1

Sosny should consider establishing a structurally independent department dedicated to provide assistance to the regulatory body. (Phase 2)

S-2.2 No. 1

Belarus should consider addressing the function of operating experience within future organizations of the operator and regulatory body. (Phase 2)

S-4.1 No. 1

Belarus should consider developing a financial risk management plan. The financial consequences of common risks related to nuclear power programmes like delays in licensing or construction should be taken in consideration. (Phase 2)

S-5.1 No. 1

Belarus may consider accepting the amendment to the Convention on Physical Protection of Nuclear Material adopted in 2005. (Phase 2)

S-5.3 No. 1

Belarus should further pursue efforts to review and amend related laws to a nuclear power programme. (Phase 2)

S-6.1 No. 1

To strengthen its nuclear regulatory infrastructure in the area of safeguards implementation, Belarus should continue to pay attention to the completion of the AP ratification process. (Phase 2)

S-6.2 No. 1

To be ready for smooth implementation of safeguards in the constructed NPP, further consult safeguards related approaches conducted by other States constructing a new NPP and take active part in the relevant IAEA training courses (e.g. “On Safeguards by Design”, “On Nuclear Material Accounting and Reporting”). (Phase 2)

S-6.2 No. 2

Belarus may consider further assistance of the IAEA in implementing CSA and AP requirements, as applicable, through a national training course and/or an ISSAS mission. (Phase 2)

S-7.1 No. 1

Belarus should consider expanding its bi-lateral cooperation to include technical expertise in the regulatory review of preliminary safety analysis report associated with licensing of first NPP. (Phase 2)

S-8.2 No. 1

Requirements on funds, staffing of specialist organizations involved in radiation protection activities should be regularly updated with respect to stage of implementation of the nuclear programme. (Phase 2)

S-8.2 No. 2

The Ministry of Health should consider strengthening its capabilities and allocate necessary resources (and organizational coordination) in the area of radiation protection and dose assessment. (Phase 2)

S-10.2 No. 1

MES/GAN should consider an early completion of licensing requirements related to the Qualification of NPP personnel, that they can be considered by the operating organization workforce plans for phase 3. (Phase 2)

S-14.1 No. 1

Necessary arrangements should be made to coordinate emergency response plans with neighboring countries which fall within the precautionary action zone or the urgent protective action planning zone. (Phase 2)

S-15.1 No. 1

The Government should fulfill its commitment to establish a programme to develop strong security culture. (Phase 1)

S-15.1 No. 1

The development and enforcement of the planned legislative and regulatory documents should be finalized. (Phase 2)

S-15.3 No. 1

The *Terms of Reference on NPP Physical Protection Design* should be finalized in accordance with the DBT. (Phase 2)

S-16.1 No. 1

Belarus should consider reviewing the existing legal framework in terms of policy for spent fuel management and incorporate the missing elements in the Strategy for the management of spent fuel, which should be endorsed by the Belarusian government (Phase 2)

S-17.1 No. 1

Belarus should consider reviewing the existing legal framework in terms of policy for radioactive waste management and, when appropriate, incorporate the missing elements in the Strategy for radioactive waste management. (Phase 1)

S-17.3 No. 1

The studies performed might consider co-disposal of intermediate and high level waste in a single facility at the national level. (Phase 1)

S-17.1 No. 1

While updating the draft Strategy for radioactive waste management, creating a waste tracking system is proposed to be included. (Phase 2)

S-17.1 No. 2

Radioactive waste classification system in Belarus should be harmonized with the IAEA's current system to involve disposal aspects and to enhance application of the IAEA recommendations in Belarus. (Phase 2)

S-17.2 No. 1

To consider approaches for long term management of waste which require disposal in subsurface facilities and incorporate them in the Strategy for radioactive waste management. (Phase 2)

Good Practices

The team further recognized good practices that are worth attention as a model in the drive for excellence:

GP-1.2 No. 1

The INIR team concluded that the IDC is functioning well as the NEPIO, and that the high level authority to which it reports, the full participation by relevant Ministries, and the frequency of its meetings can facilitate the swift resolution of any issues and can be a model of good practice. (Phase 1)

GP-6.2 No 1

Well-coordinated "in depth approach" used for the SSAC establishment through a set of regulatory/normative instruments in 1995, starting from basic legal provisions, followed by Governmental and Ministry of Emergency Situations' Resolutions, with the detailed MES/GAN's regulations and instructions at the end.

GP-6.3 No. 1

There are requirements that oblige an applicant to have in place an internal Nuclear Material Accounting and Control instruction/procedure as a pre-condition for issuing a license for nuclear material possession/use. (Phase 1).

GP-7.1 No. 1

For coordination amongst organizations with regulatory responsibilities, the Resolution of the Council of Ministers of Belarus "On a working group to coordinate the implementation of state supervision of nuclear power plant construction." is approved (No. 1791, 30 December

2011). This Resolution provides MES/GAN with regulatory authority for coordination. (Phase 2)

GP-8.2 No. 1

A prompt response in transposing new international radiation protection standards (IAEA GSR Part 3) into national regulations which contributes to an enhanced level of protection of the population and to a safe use of nuclear energy in the country. (Phase 1)

GP-8.1 No. 1

The operation of Unified System for Control and Recording of Individual Exposure Doses covering all groups of population contributes to an effective protection of the population. (Phase 2)

GP-10.2 No. 1

The implementation of a National, high level committee coordinating all issues concerning nuclear power staff training in Belarus and represented by all stakeholder organizations is considered as a good practice. It demonstrates the commitment of the Government to the importance of qualified human resources and will support the effective development of all institutions involved. (Phase 1)

GP-10.2 No. 1

Belarus had established a very effective education programme to cover its need in developing the required work force for the nuclear power programme. Various universities and other educational institutions had developed discipline specific education programmes, needed in a nuclear power programme. It provides these students in an early phase with the specifics relevant for the safe use of nuclear power such as safety culture and other approaches. The programme supports the National NP Programme with well-prepared graduates and minimizes the need for job specific training in the organizations that are expected to receive those graduates. (Phase 2)

GP-16.1 No. 1

In spite of agreed fuel take-back by the vendor, Belarus institutions have been studying alternative options of managing spent fuel. This increases country's capability to overcome risk of termination of the current contract and flexibility to select economically optimal approach. (Phase 1)

GP-17.2 No. 1

The INIR team considers developing a national strategy dealing with management of radioactive waste from all national sources as beneficial: it simplifies the relevant infrastructure, optimize the need for facilities, and economize the whole waste management system.

7. EVALUATION RESULTS FOR PHASE 1

For the purposes of the INIR mission results, the following definitions are used:

Significant actions needed

The “Review observations” indicates that there is considerable effort still needed to realize the stated “Condition”, and that achievement of this “Condition” is needed in order to be able to sustain overall progress in developing an effective national nuclear power infrastructure.

Minor actions needed

The “Review observations” indicates that there is some effort still needed to realize the stated “Condition”. However, the current status, supported by the on-going activities, mostly achieves the desired “Condition”.

No actions needed

The available evidence indicates that the intention underlying this “Condition” has been achieved. However, as work continues on the infrastructure knowledge and implementation, care has to be taken to ensure that this status remains valid.

Recommendations

Recommendations are proposed when aspects related to fulfilment of conditions of nuclear infrastructure development are discrepant, incomplete or inadequately implemented. Recommendations are specific, realistic and designed to result in tangible improvement. Recommendations are based on the *Milestones Approach* and, as applicable, state the relation with the specific issue. The recommendations are formulated so they are succinct and self-explanatory.

Suggestions

Suggestions may indicate areas where concrete plans exist and are being executed, or for useful improvement of existing programmes and to point out possible better alternatives to current work. In general, suggestions stimulate the management and staff to consider new or different approaches to develop infrastructure and enhance performance. Suggestions are formulated so they are succinct and self-explanatory.

Good practices

A good practice is identified in recognition of an outstanding organization, arrangement, programme or performance, superior to those generally observed elsewhere. A good practice is more than just the fulfilment of the conditions or expectations. It is worthy of the attention of other countries involved in the development of nuclear infrastructure as a model in the drive for excellence. Good practices also reference the bases (similar to suggestions) and are clearly documented in the mission report.

It should be noted that the results summarized in the following tables neither validate the country actions and programmes, nor certify the quality and completeness of the work done by a country.

8. EVALUATION RESULTS FOR PHASES 1 AND 2

1. National Position	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
1.1 Safety, security and non-proliferation needs recognized			X
1.2 NEPIO established and staffed			X
1.3 National strategy defined			X
1. National Position	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
1.1. Government support evident			X
1.2. Commitments and obligations of owner/operator established			X
2. Nuclear Safety	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
2.1 Understanding of key elements of nuclear safety			X
2.2 Need for inter-governmental instruments on safety			X
2.3 Support through international cooperation intended			X
2. Nuclear Safety	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
2.1 Safety responsibilities of all stakeholders recognized	X		
2.2 Safety culture evaluated		X	
2.3 Long Term relationship with supplier established			X

3. Management	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
3.1 Energy strategy and nuclear power compatibility analysed			X
3.2 Unique Member State conditions evaluated			X
3.3 Available nuclear technologies identified			X
3.4 Ownership options and operational responsibilities considered			X
3.5 Authorities and responsibilities established			X
3.6 Appropriate expertise and experience			X
3.7 Commitment evident to management systems that promote and support a strong safety culture			X
3. Management	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
3.1 BIS available			X
3.2 Adequate staff available to prepare and analyse bids			X
3.3 Bid evaluation criteria determined			X
3.4 Contracting strategy established			X
3.5 Project management organization established			X
3.6 Management systems established		X	
4. Funding and Financing	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
4.1 Adequate funding provided for the NEPIO to fully assess the commitments required to implement a nuclear power programme			X

4.2 Strategies established for funding and financing			X
4. Funding and Financing	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
4.1 Strategy for management of financial risks available		X	
4.2 Funding and financing plan available			X
5. Legislative Framework	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
5.1. Adherence to all relevant international legal instruments planned			X
5.2 Plans for national nuclear legislation to be enacted			X
5.3. Consultation with national stakeholders about the legislative framework			X
5. Legislative Framework	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
5.1 International legal instruments governing nuclear activities in force		X	
5.2 A comprehensive nuclear law is enacted and in force	X		
5.3 All legislation dealing with the nuclear power programme developed promulgated and in force		X	
6. Safeguards	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
6.1 Obligations under NPT and non-proliferation treaties and other international instruments, recognized			X

6.2 Development, implementation and enforcement of safeguards framework, including SSAC establishment, planned			X
6.3 International requirements for any existing nuclear facilities or locations outside facilities met			X
6. Safeguards	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
6.1 Terms of international safeguards agreement in place			X
6.2 SSAC established and operational			X
6.3 Early safeguards relevant information provided to IAEA		X	
6.4 Specific legislation and relevant safeguards procedures in place		X	
7. Regulatory Framework	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
7.1 Development of an adequate regulatory framework planned			X
7. Regulatory Framework	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
7.1 Independent regulatory body established	X		
8. Radiation Protection	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
8.1 Hazards presented by NPP operation recognized			X
8.2 Enhancements to national regulations and infrastructures planned			X

8. Radiation Protection	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
8.1 Actions to prepare adequate radiation protection programmes undertaken			X
8.2 Expansion of appropriate infrastructures planned		X	
9. Electrical Grid	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
9.1 Electrical grid requirements considered			X
9. Electrical Grid	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
9.1 Detailed studies to determine grid expansion, upgrade or improvement undertaken			X
9.2 Plans, funding and schedule for grid enhancement available			X
10. Human Resources	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
10.1 Necessary knowledge and skills identified			X
10.2 Develop and maintenance of human resource base planned			X
10. Human Resources	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
10.1 Knowledge and skills needed in organizations for Phase 3 and operational phase identified	X		

10.2 A plan to develop and maintain the human resource base in organizations for Phase 3 and operational phase is developed		X	
11. Stakeholder Involvement	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
11.1 Strong public information and education programme initiated			X
11.2 Need for open and timely interaction and communication regarding the nuclear power programme addressed			X
11. Stakeholder Involvement	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
11.1 Public information and education programme developed		X	
12. Site and supporting facilities	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
12.1 General survey of potential sites, conducted			X
12.2 Selected site(s) justified			X
12. Site and supporting facilities	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
12.1 Detailed site characterization completed			X
12.2 Site ready for construction			X
13. Environmental Protection	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO

13.1 Unique environmental issues recognized			X
13.2 Environmental impact assessment production and communication recognized			X
13.3 An effective environmental framework for existing uses of radiation sources in place			X
13. Environmental Protection	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
13.1 Environmental studies for selected sites performed			X
13.2 Particular environmental sensitivities included in BIS			X
13.3 Clear and effective regulation of environmental issues established			X
14. Emergency Planning	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
14.1 Appreciation of the need for emergency planning, developed			X
14.2 Communication with and involvement of local and national government taken into account			X
14.3 Emergency planning for existing radiation facilities and practices in place			X
14. Emergency Planning	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
14.1 Detailed approach to emergency planning being implemented		X	
14.2 Emergency planning for existing radiation facilities and practices in place			X
14.3 Actions from earlier reviews completed			X
15. Security	Phase 1		

Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
15.1 Requirements for security and physical protection acknowledged		X	
15.2 Necessary regulation identified			X
15.3 Effective security protection for existing uses of radiation sources in place			X
15. Security	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
15.1 Legislation promulgated		X	
15.2 DBT defined	X		
15.3 Security requirements defined		X	
15.4 Sensitive information defined			X
15.5 Physical protection by trained on-site security staff provided			X
15.6 Programmes for selection/qualifications of staff with access to facilities in place			X
15.7 Security culture promulgated	X		
16. Nuclear Fuel Cycle	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
16.1 Knowledge of nuclear fuel cycle steps and approaches developed			X
16.2 Need for site spent fuel storage recognized			X
16.3 Interim spent fuel storage considered			X
16. Nuclear Fuel Cycle	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO

16.1 Fuel cycle strategy decided		X	
17. Radioactive Waste	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
17.1 The burdens of radioactive waste from nuclear power plants recognized		X	
17.2 Current capabilities for waste processing, storage and disposal reviewed			X
17.3 Options for ultimate disposal of high level radioactive waste recognized			X
17. Radioactive Waste	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
17.1 Handling the burdens of radioactive waste considered	X		
17.2 Implementation plan for ultimate high level waste disposal in preparation		X	
18. Industrial Involvement⁺	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
18.1 National policy with respect to national and local industrial involvement considered			X
18.2 Need for strict application of quality programmes for nuclear equipment and services recognized			X
18. Industrial Involvement⁺	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
18.1 Realistic assessment of the national and local capabilities carried out			X
18.2 Ability to meet schedule and quality requirements analysed			X

18.3 Plans and programmes to transition to national and local suppliers in place			X
19. Procurement	Phase 1		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
19.1 Unique requirements associated with purchasing nuclear equipment and services recognized			X
19.2 Consistent policies for nuclear procurement in place			X
19. Procurement	Phase 2		
Condition	Actions needed		
	SIGNIFICANT	MINOR	NO
19.1 Owner/operator competence to carry out nuclear procurement evident			X
19.2 Procurement programme consistent with national policy for industrial participation established			X

Attachment 1: Review observations, recommendations and suggestions for Phases 1 and 2

1. National Position		Phase 1
Condition 1.1: Safety, security and non-proliferation needs recognized		
Basis for evaluation	Review observations	
Official documentation clearly demonstrating the Government's commitment to the safe, secure and peaceful implementation of nuclear power for the long term.	The mission team found that the Law of Belarus, dated July 30, 2008, "On the use of atomic energy" clearly demonstrates the Government's commitment to the safe, secure and peaceful implementation of nuclear power. <u>Condition 1.1</u> : Milestone 1 reached. <u>Major gaps</u> : None.	
EVALUATION Condition 1.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS: none		
R-1.1 No. 1		
SUGGESTIONS: none		
S-1.1 No. 1		
GOOD PRACTICES: none		
GP-1.1 No. 1		

1. National Position		Phase 1
Condition 1.2: NEPIO established and staffed		
Basis for evaluation	Review observations	
1.The charter showing that the NEPIO has been established by and reports to a senior government minister	1. The mission team identified the Inter-Departmental Commission (IDC) acting as NEPIO, headed by the First Deputy Prime Minister and reports to the Prime Minister. Members of the IDC are from all relevant Ministries of Belarus participating in the nuclear power programme. The mission team was informed that IDC meets monthly to discuss the issues related to the Nuclear Power Programme of the Belarus and reviews the works performed by each organization. The mission team was informed that the IDC follows up on the actions from previous meetings. 2. The mission team was informed that the roles and responsibilities of each Ministry or organization are defined in	

2. The roles and responsibilities defined in the charter are known by other government ministries and key members of the NEPIO.

3. The NEPIO charter clearly charges and authorizes the preparation of a comprehensive report to identify the commitments and conditions necessary to establish a national nuclear power programme. It defines an adequate scope of investigations and clear definition of objectives and timescales. It should identify how its mandate and activities fit with the overall plan for implementing the nuclear power option.

4. A clear description of how the NEPIO operates in terms of funding, office accommodation and equipment, and reference material.

5. Evidence showing adequate interactions between, and support from, appropriate ministers such as those responsible for energy, environment, etc.

6. A documented budget planning and reporting process showing that appropriate funding is provided to and expended by the NEPIO to fulfil its charter in the scheduled time.

7. Organizational charts, job descriptions and CVs of members demonstrating appropriate skills, qualifications and experience to address all of the infrastructure issues based on requirements in the publication *Basic Infrastructure for a Nuclear Power Project* (TECDOC-1513). This includes appropriate use of consultants and the demonstration that the organization is an 'intelligent customer' (i.e. the organization has a clear understanding and knowledge of the product or service being supplied).

Government documents

3. The mission team understood from discussions that the IDC is fully charged and authorized to prepare and oversee the execution of the national Nuclear Power Programme.

4. It was reported to the mission team that each Ministry involved in the nuclear power programme is responsible for its own budget, offices, equipment and reference material. The team identified Clauses 9 to 11 of the provision on the Department of Nuclear Energy of the MoE, (approved by Resolution of the Council of Ministers of Belarus No. 1330, dated September 10, 2008) that provides for the budget, financing and funding for the DoNE.

5. The Plan of main preparation activities to be implemented before the beginning of construction of the nuclear power plant in Belarus, approved by the Resolution of the Council of Ministers of Belarus No. 905-9, dated July 18, 2006 and Resolution of the Council of Ministers of Belarus, No. 972-10, dated July 31, 2006 "On inter-departmental commission for coordination and control of implementation of the comprehensive plan of the main organizational measures for nuclear power plant construction in the Republic of Belarus."

6. Since the IDC acts as the NEPIO, it is obvious that appropriate funding is provided by Governmental budget. Clause 10 of the Statute of the DoNE of the MoE approved by Resolution of the Council of Ministers of Belarus No. 1330, dated September 10, 2008. Funding and Financing of the DoNE of the MoE is provided through the budget of the MoE as per agreement with the Ministry of Finances.

7. The structure and members of the IDC were confirmed with the list of participating ministries and information on the agenda items discussed by the IDC. The mission team understood that the participants had the relevant responsibilities to address the topics discussed.

The INIR team concluded that the IDC, which is chaired by the First Deputy Prime Minister is acting as NEPIO, and the IDC meets at least once a month. The mission team identified that the IDC is functioning well as the NEPIO, and that the high level authority to which it reports, the full participation by relevant Ministries, and the frequency of its meetings can facilitate the swift resolution of any issues and can be a model of good practice.

	<u>Condition 1.2:</u> Milestone 1 reached. <u>Major gaps:</u> None.	
EVALUATION Condition 1.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
R-1.2 No. 1		
SUGGESTIONS none		
S-1.2 No. 1.		
GOOD PRACTICES		
GP-1.2 No. 1 The INIR team concluded that the IDC is functioning well as the NEPIO, and that the high level authority to which it reports, the full participation by relevant Ministries, and the frequency of its meetings can facilitate the swift resolution of any issues and can be a model of good practice.		

1. National Position		Phase 1
Condition 1.3: National strategy defined		
Basis for evaluation	Review observations	
<p>1. Comprehensive report produced by the NEPIO covering all areas identified in the Milestones publication (NG-G-3.1) and recognizing the resources and timescales required for the activities required for Phase 2.</p> <p>2. A demonstration that the Member State can provide the overall resources required integrated across all areas.</p> <p>2. Executive summary of the comprehensive report is based on the detailed report, contains estimates of total resources and timescales and has been properly reviewed by senior government officials.</p>	<p>1. INIR team found that the Report of the First Deputy Prime Minister of Belarus, V.I. Semashko at the meeting of the Council of Ministers of Belarus (March 23, 2007) covers the main elements of this condition. The INIR team understood from discussions that Belarus has a good understanding of the overall resources required, and has already signed an Inter-Governmental Agreement with the Russian Federation for the construction of the NPP as well as a loan agreement. The INIR team considered that this condition has been met.</p> <p><u>Condition 1.3:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>	
EVALUATION Condition 1.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X

RECOMMENDATIONS none R-1.3 No. 1
SUGGESTIONS none S-1.3 No. 1.
GOOD PRACTICES GP-1.3 No. 1

1. National Position		Phase 2
Condition 1.1: Government support evident		
Basis for evaluation	Review observations	
<p>1. Evidence that an ongoing government role for nuclear power programme implementation has been clearly defined and established within a government agency (e.g. energy or industry).</p> <p>2. Appropriate bilateral agreements in place with vendor countries.</p>	<p>1. The INIR team determined that on-going government support is described in the Resolution of the Security Council of Belarus, 31 January, 2008, No.1, “On the Development of the Nuclear Power Sector in the Republic of Belarus” and the Law of Belarus “On the Use of Atomic Energy” (30 July, 2008), Articles 5-8.</p> <p>2. It has been identified that there were two bilateral agreement with the Russian Federation:</p> <ul style="list-style-type: none"> • Agreement between the Government of Belarus and the Government of the Russian Federation on Cooperation in the Use of Nuclear Energy for Peaceful Purposes, 28 May, 2009. • Agreement between the Government of Belarus and the Government of the Russian Federation on Cooperation in Construction of the Nuclear Power Plant in the Territory of the Republic of Belarus, 15 March, 2011. <p><u>Condition 1.1</u>: Milestone 2 is reached. <u>Major gaps</u>: None.</p>	
EVALUATION Condition 1.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none R-1.1 No. 1		
SUGGESTIONS none S-1.1 No. 1		

GOOD PRACTICES

GP-1.1 No. 1

1. National Position		Phase 2	
Condition 1.2: Commitments and obligations of owner/operator organizations established			
Basis for evaluation		Review observations	
<p>1. Document setting out responsibilities of key national organizations and intended contracting strategy.</p> <p>2. Clear understanding of the organization being licensed to operate the nuclear power plant and evidence of adequate resources to comply with license requirements. Clarity of role and responsibilities of the owner if different from the license holder.</p> <p>3. If vendor is undertaking any initial owner responsibilities, clear plans on how ownership, knowledge and capability will be transferred.</p>		<p>1. The responsibilities of the key national organizations are set out in the Comprehensive Plan of Key Organizational Measures for the Nuclear Power Plant Construction in the Republic of Belarus, approved by the Resolution of the Council of Ministers of Belarus, 21 January, 2009, No. 64-2.</p> <p>2. The INIR team understood that the DNPPC will be the operator. The mission team reviewed an organizational chart of the Directorate and understood that the Ministry of Energy and the Directorate have an understanding of the licensing requirements and the intention to carry them out.</p> <p><u>Condition 1.2:</u> Milestone 2 reached. <u>Major gaps:</u> None.</p>	
EVALUATION Condition 1.2			
Actions needed			
SIGNIFICANT	MINOR	NO	
		X	
RECOMMENDATIONS			
none			
SUGGESTIONS			
none			
GOOD PRACTICES			
none			

2. Nuclear Safety		Phase 1	
Condition 2.1: Key elements of nuclear safety understood			
Basis for evaluation		Review observations	
Evidence that the NEPIO has an understanding of		Belarus has demonstrated that key elements of nuclear	

and commitment to the safety objectives and principles described in the IAEA Fundamental Safety Principles and the safety standards. Evidence that international safety standards and nuclear safety good practices are known by the NEPIO members.

Evidence that INSAG publications have been reviewed and key issues identified.

Recruitment and training plans showing commitment to ensure appointment of leaders with appropriate training and experience for the leadership and management of safety.

Recognition of and commitment to the costs of training programmes to develop an appropriate safety culture in each of the relevant organizations to be established.

Recognition of and commitment to the costs of training programmes to ensure safety principles are promulgated within organizations to be established. Evidence that the ultimate responsibility of the operator is recognized.

Recognition of and commitment to the establishment of a regulatory system with a clear legal function for nuclear safety.

safety are understood. As noted during the interview, the nuclear power development of Belarus has a long history that was abandoned after Chernobyl accident. More than twenty years later Belarus has made a decision for the introduction of nuclear power in Belarus. As the INIR mission is being conducted well into the preparation of nuclear infrastructure, the evidence of understanding of key elements of nuclear safety is largely contained in the developed infrastructure, itself.

Some of the IAEA Fundamental Safety Principles have been incorporated in the Law of Belarus, dated July 30, 2008, "On the use of atomic energy", while others in statues on the governmental bodies responsible for the use of nuclear power. Furthermore, the MES demonstrated good understanding of key elements by the early identification of the issue with authority to carry out inspection. The INIR team discussed the measures being taken to address the issue and encourage the draft provisions become enacted to support future regulatory functions.

Similar to the IAEA Fundamental Safety Principles, international safety standards, best practices, and concepts from INSAG publications have been considered in the development of the Belarus regulatory infrastructure. The INIR team sampled different regulatory documents to confirm that elements of nuclear safety are evident.

The INIR team acknowledged the use of the IAEA Global Nuclear Safety and Security Network, for the Portal for Belarus and notes the positive feedback from the counterpart.

Regarding training programmes and recruitment of personnel, Belarus has demonstrated knowledge of the related nuclear safety issues within the human resource development and training plans, themselves. Specific consideration of the training programmes and management discussions are contained within Milestone issues 3 on Management and 10 on Human Resource Development, respectively.

Regarding prime responsibility for safety, Belarus identified the Law "On the use of atomic energy" and two related Presidential decrees. The INIR team noted that the Law of 2008 identified the operating organization in bearing the responsibility accordance with the legislation, for failure to observe the safety requirements. The INIR team acknowledges this assigns responsibility to the operator, but it is inconsistent with the IAEA Fundamental Safety Principles that assign the prime responsibility for safety.

Regarding the commitment for the establishment of a

	<p>regulatory system, the INIR team notes that Belarus has already established a considerable amount of the regulatory framework to support the nuclear power plant project.</p> <p>The INIR team concludes Belarus understands key elements of nuclear safety. Suggested actions in the preceding text are treated within Phase 2 Recommendations and Suggestions.</p> <p><u>Condition 2.1</u>: Milestone 2 reached.</p> <p><u>Major gaps</u>: None.</p>	
EVALUATION Condition 2.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
R-2.1 No. 1		
SUGGESTIONS		
S-2.1 No. 1		
GOOD PRACTICES		
GP-2.1 No. 1		

2. Nuclear Safety		Phase 1
Condition 2.2: Need for intergovernmental instruments on safety recognized		
Basis for evaluation	Review observations	
Government statement on acceptance of the Global Nuclear Safety Regime resulting from a commitment to a nuclear power programme.	<p>The self-evaluation report provided extensive evidence in the implementation of intergovernmental instruments for nuclear safety. International obligations were identified in the Law of Belarus, dated July 30, 2008 “On the use of atomic energy”. Furthermore, Belarus has already become party to the following conventions:</p> <p>The Convention on nuclear safety; The Convention on early notification of a nuclear accident; The Convention on assistance in the case of a nuclear accident or radiological emergency; The Vienna Convention on civil liability for nuclear damage; and The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.</p>	

		Condition 2.2: Milestone 1 reached. Major gaps: None.
EVALUATION Condition 2.2		
Actions needed		
SIGNIFICANT	MINOR	NO X
RECOMMENDATIONS		
R-2.2 No. 1		
SUGGESTIONS		
S-2.2 No. 1		
GOOD PRACTICES		
GP-2.2 No. 1		

2. Nuclear Safety		Phase 1
Condition 2.3: Support through international cooperation intended		
Basis for evaluation	Review observations	
<p>Commitment to join Nuclear Safety Convention and to actively participate in the peer review process.</p> <p>Evidence of review of options for bilateral or regional cooperation and specific actions for the selected cooperation started.</p> <p>Implementation of national technical cooperation programme with IAEA and evidence of Government financial support.</p> <p>Specific plans for cooperation with other international organizations (WANO, nuclear regulators, universities, etc.).</p>	<p>The Self-evaluation report provided extensive evidence related to this condition including as noted above, the provisions in the nuclear law. Belarus became a party to the CNS in Jan 27, 1999 and has participated in several review meetings. Furthermore, the Self-evaluation report identified bilateral agreements with Russia, China, on peaceful uses; Poland and Ukraine on early notification of accidents; Austria regarding information exchange on nuclear safety and protection of ionizing radiations. They are in negotiations with Lithuania and have a draft agreement with Armenia. With respect to bilateral and regional cooperation, Belarus counterpart discussed with the INIR team other areas of technical cooperation that are being considered. The INIR team encouraged the completion of agreements with additional countries, especially those in the process of introduction of their first NPP using Russian technology.</p> <p>Lastly, the self-evaluation report identified several national technical cooperation projects with IAEA regarding their nuclear programme. Through discussion with the counterpart, the INIR team notes the extensive cooperation with the European Union, too.</p> <p><u>Condition 2.3: Milestone 1 reached.</u></p> <p><u>Major gaps: None.</u></p>	

EVALUATION Condition 2.3		
Actions needed		
SIGNIFICANT	MINOR	NO X
RECOMMENDATIONS R-2.3 No. 1		
SUGGESTIONS S-2.3 No. 1		
GOOD PRACTICES GP-2.3 No. 1		

2. Nuclear Safety		Phase 2
Condition 2.1: Safety responsibilities by all stakeholders recognized		
Basis for evaluation	Review observations	
<p>Roles and responsibilities clearly defined with respect to nuclear safety in the operating, regulatory and technical support organizations. Protocol agreed for interactions between operator, regulator, vendor and technical support organizations.</p> <p>Process and responsibilities defined for review and understanding of information supplied by vendor during construction.</p> <p>Training programmes for regulators, operators and technical specialists defined including process for information exchange with design specialists.</p> <p>Evidence of how staff has acquired the necessary knowledge in nuclear safety covering national and international standards, nuclear safety good practices, for example, as set out in IAEA Safety Standards.</p> <p>Evidence that the categorization of safety importance of systems structures and components and the implications for quality and safety assessment is understood.</p> <p>Evidence that the safety requirements to ensure criticality safety during handling of nuclear material are understood and that processes are in place to ensure compliance with requirements.</p>	<p>The INIR team considered the self-evaluation report, the interview and additional references provided in reviewing the various roles and responsibilities defined with respect to safety. Order of the President of Belarus, 29 March, 2011, No.124, the State Institution DNPPC is defined as the NPP operating organization. The Presidential Order № 565 “About some measures on NPP construction” of November, 12 2007 identifies GAN within the Ministry of Emergency Situations with main regulatory functions for the NPP. The 2008 Law of Belarus on the Use of Atomic Energy elaborates governmental functions of the Ministry of Energy and Ministry of Emergency Situations without explicitly identifying GAN or DNPPC. The INIR team noted that the Law of 2008 identified the operating organization in bearing the responsibility accordance with the legislation, for failure to observe the safety requirements. The INIR team acknowledges this assigns responsibility to the operator, but it is inconsistent with the IAEA Fundamental Safety Principles that assign the prime responsibility for safety.</p> <p>The INIR team discussed the organization of the technical support organization, Sosny, with the counterpart. The INIR team discussed provisions that may lead for conflict of interest as Sosny provides support to both the operating organization and the regulatory body. MES/GAN described a draft Technical Code of Practice (TCP) related to technical support. The INIR team acknowledges this effort and recommends expedited implementation of the TCP.</p> <p>Regarding protocol for interactions, the Self-evaluation report identified this will be implemented within scope of authorities of state agencies and organizations. Following</p>	

	<p>discussion with the counterpart, the interactions will follow standard practice between formal arrangements between the operator and regulator.</p> <p>Regarding the review of technical information provided by the vendor, the self-evaluation report identified this will be implemented within scope of authorities of state agencies and organizations. Following discussion with the DNPPC, they described current experience and capacity to review the information from the vendor.</p> <p>Regarding training programmes – the self-evaluation report identifies the State Programme of Staff Training for Nuclear Power Sector in the Republic of Belarus for 2008-2020. The INIR team acknowledged the National approach for personnel training. This is discussed in detail under Issue 10, Human Resource Development.</p> <p>Regarding acquired knowledge in nuclear safety, understanding of safety significance of SSCs, and criticality, the INIR team considered the training programme, assistance through technical cooperation and the technical regulations that have been issued as evidence to demonstrate the acquired knowledge to support Phase 2.</p> <p>Condition 2.1: Milestone 2 not reached. Major gaps: Yes, major gaps identified:</p> <ol style="list-style-type: none"> 1. The prime responsibility for safety has not been formulated consistent with IAEA Fundamental Safety Principles 2. Provisions for conflict of interest related to TSO support to regulatory body and operating organization not established.
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EVALUATION Condition 2.1:

Actions needed

SIGNIFICANT	MINOR	NO
X		

RECOMMENDATIONS

R-2.1 No. 1. In consideration of its review of the legislative framework [R-5.2 No. 1], Belarus should consider formulations that are fully consistent with the IAEA fundamental safety principles – specifically assigning prime responsibility to the operator.

R-2.1 No 2. MES/GAN should expedite issuance and implementation of the existing draft Technical Code of Practice that addresses potential conflict of interest in the provision of technical support to both regulatory body and operating organization. Further, Sosny and other technical support organizations should establish measures to minimize the possibility of conflict of interest regarding the provision of support to both operating organization and regulatory body.

SUGGESTIONS

S-2.1 No. 1 Sosny should consider establishing a structurally independent department dedicated to providing assistance to the regulatory body.

GOOD PRACTICES

GP-2.1 No. 1

2. Nuclear Safety**Phase 2****Condition 2.2: Safety culture evaluated**

Basis for evaluation	Review observations
<p>Operation feedback process defined involving all relevant organizations, including the review of international events.</p> <p>Report summarizing steps taken to ensure safety culture, review of effectiveness and future plans to maintain a high level of safety culture.</p>	<p>Regarding operation feedback, the self-evaluation report identifies that activities are implemented within scope of authorities and participation in the Convention on Nuclear Safety. The INIR team through discussion with the counterpart acknowledges the cooperation with the Russian counterparts. The team notes that this will present the initial access to relevant operation experience. The INIR team encourages additional international cooperation and future consideration to establishing within the future organization, the functional responsibility for operating experience. The INIR team notes that the function of operating experience is not explicitly identified in either the operating organization or regulatory body. In the context of construction experience, the INIR team discussed the OECD/NEA initiative on the construction experience database but recognized that it is not available for general use.</p> <p>The counterpart described the various steps to ensure safety culture, including the bilateral cooperation with Russian experts to provide support for the operating organization on training, and modern information technology as a means to ensure safety culture.</p> <p><u>Condition 2.2:</u> Milestone 2 reached. <u>Major gaps:</u> none.</p>

EVALUATION Condition 2.2**Actions needed**

SIGNIFICANT	MINOR	NO
	X	

RECOMMENDATIONS

R-2.2 No. 1

SUGGESTIONS

S-2.2 No. 1. Belarus should consider addressing the function of operating experience within future organizations of the operator and regulatory body.

GOOD PRACTICES

GP-2.2 No. 1

2. Nuclear Safety		Phase 2	
Condition 2.3: Long-term relationship with supplier established			
Basis for evaluation		Review observations	
Contract planned to defining required levels of support from vendor and mechanisms for information exchange, training, technical support, etc.		<p>The counterpart described their current approach to long-term relationship with the supplier. The current relationship is a two-year warranty period following initial operation. There is also agreement to assist during refuelling.</p> <p>The DNPPC has plans for extended cooperation, as well as agreements with Euratom, Russian and Ukraine. The INIR team encourages DNPPC to secure a longer term agreement of assistance with the supplier based on the provisions in the intergovernmental agreement.</p> <p><u>Condition 2.3:</u> Milestone 2 reached. <u>Major gaps:</u> none.</p>	
EVALUATION Condition 2.3			
Actions needed			
SIGNIFICANT	MINOR	NO	
		X	
RECOMMENDATIONS			
R-2.3 No. 1			
SUGGESTIONS			
S-2.3 No. 1			
GOOD PRACTICES			
GP-2.3 No. 1			

3. Management		Phase 1	
Condition 3.1: Energy strategy and nuclear power compatibility analysed			
Basis for evaluation		Review observations	
A government report justifying the role of nuclear power in the future energy strategy of the Member State.		<p>The latest energy strategy for Belarus was approved by the Council of Ministers in 2010.</p> <p>In order to enhance the production of power and heat by generating sources it was found necessary along with other projects to construct two units of a nuclear power plant with total capacity of 2340 MW by 2020.</p> <p>The strategy targets were not changed from the earlier</p>	

		justification documented in the report “Development of Nuclear Power Sector in the Republic of Belarus” in June 2007). <u>Condition 3.1:</u> Milestone 1 reached. <u>Major gaps:</u> none.
EVALUATION Condition 3.1		
Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		
SUGGESTIONS		
None		
GOOD PRACTICES		
None		

3. Management		Phase 1
Condition 3.2: Unique Member State conditions evaluated		
Basis for evaluation	Review observations	
A report produced by the NEPIO describing national criteria and general specifications for a nuclear Power plant to be implemented in the Member State.	The Ministry of Energy and the National Academy of Sciences of Belarus have issued reports in 2008 to the Head of the State concerning the issue of selection of a design of the nuclear power plant and a vendor. These reports formed the basis for subsequent decisions by the Belarus Government about the strategy how to implement a nuclear power project in Belarus. <u>Condition 3.2:</u> Milestone 1 reached. <u>Major gaps:</u> none.	
EVALUATION Condition 3.2 reached		
Actions needed: none		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		

SUGGESTIONS None
GOOD PRACTICES None

3. Management Condition 3.3: Available nuclear technologies identified		Phase 1
Basis for evaluation	Review observations	
A report produced by the NEPIO based on analysis of information, including that provided by potential vendors showing that there are nuclear power plant designs available that fulfil national criteria.	A working group for the selection of the NPP design was established. Their justification was documented in a report issued in April 2009. <u>Condition 3.3:</u> Milestone 1 reached <u>Major gaps:</u> none.	
EVALUATION Condition 3.3 Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None		
GOOD PRACTICES None		

3. Management Condition 3.4: Ownership options and operational responsibilities considered		Phase 1
Basis for evaluation	Review observations	
A plan produced by the NEPIO analysing possible ownership and organizational structures for financing, implementation and operation of the nuclear power plant and demonstrating	The major issues concerning the organization of preparatory works for NPP construction in Belarus and implementation of nuclear and radiation safety were decided and addressed by the Presidential Decree "About some measures on NPP construction" of November 2007.	

capability for safe and successful implementation of a nuclear power programme.	<u>Condition 3.4:</u> Milestone 1 reached. <u>Major gaps:</u> none.	
EVALUATION Condition 3.4 Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None		
GOOD PRACTICES None		

3. Management Condition 3.5: Authorities and responsibilities established		Phase 1
Basis for evaluation	Review observations	
A government report describing the authorities and responsibilities of future organizations.	<p>The roles and responsibilities of the various Ministries had been defined, the responsibility for the implementation of the nuclear power project and its further operation is with the Ministry of Energy, independent supervision is with the Ministry of Emergency Situations. As usual other Ministries are involved also, such as the Ministry of Education and the Ministry of Health. For the coordination of the different Governmental organizations the “Inter-Departmental Commission” (IDC) headed by First Deputy Prime Minister was created. This commission follows up the implementation process of the nuclear power Programme programme quite closely and is an effective tool to manage interface issues and to solve conflicts hindering a smooth implementation of the programme. This was considered by the INIR team as a good practice.</p> <p><u>Condition 3.5:</u> Milestone 1 reached. <u>Major gaps:</u> none.</p>	
EVALUATION Condition 3.5 Actions needed: no		
SIGNIFICANT	MINOR	NO
		X

RECOMMENDATIONS None
SUGGESTIONS None
GOOD PRACTICES

3. Management		Phase 1
Condition 3.6: Appropriate expertise and experience involved.		
Basis for evaluation	Review observations	
Evidence that external advisors and consultants with appropriate experience have participated in the preparation and/or review of relevant documents.	<p>Belarus has a close and long lasting relationship to the Russian Federation and other neighbouring countries like Ukraine from the former Soviet Union. The team found many indications that experts from these countries have supported the Belarus nuclear power programme.</p> <p>In addition, expertise is provided by the state own scientific experts within the Joint Institute for Power and Nuclear Researches (Sosny) of the National Academy of Science, various state universities, the National Academy of Science with their different research institutions and some other expert organisations. It was recognized that those national expert organizations also have closed contact with similar organizations in Russia, Ukraine and elsewhere in the world. Cooperation programmes funded by IAEA and the EC are used to enhance the expertise in the use of nuclear power.</p> <p><u>Condition 3.6:</u> Milestone 1 reached. <u>Major gaps:</u> none</p>	
EVALUATION Condition 3.6		
Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None		

GOOD PRACTICES

None

3. Management		Phase 1
Condition 3.7: Commitment evident to management systems that promote and support a strong safety culture		
Basis for evaluation	Review observations	
A plan produced by the NEPIO to ensure that the management systems in future key organizations are designed in such a way that they provide structure and direction to the organization that permits and promotes the development of leadership and a strong safety culture.	Several specialists of organizations involved in the implementation of the NPP construction project in Belarus had participated in workshops on the topic “Safety culture” provided by IAEA and other organizations. The INIR team had found that the issue of “Safety Culture” is well recognized and embedded in all activities. The team was informed that the safety culture issue will have a high priority in the upcoming training and qualification activities. <u>Condition 3.7:</u> Milestone 1 reached. <u>Major gaps:</u> none.	
EVALUATION Condition 3.7		
Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		
SUGGESTIONS		
None		

3. Management		Phase 2
Condition 3.1: BIS Available		
Basis for evaluation	Review observations	
Documented Bid Invitation Specification (BIS) available.	In Belarus, an Intergovernmental Agreement has been signed in lieu of a competitive process for a turnkey project. Condition 3.1: Milestone 2 reached Major gaps: None	

EVALUATION Condition 3.1		
Actions needed: no (not applicable)		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

3. Management		Phase 2
Condition 3.2: Adequate staff to prepare for and analyse bids		
Basis for evaluation	Review observations	
<p>Description of organization including roles and responsibilities of departments and individuals with respect to bid assessment, supervision of NPP construction, development of knowledge base, understanding of O&M requirements.</p> <p>Evidence that NPP owner staff members are trained/qualified.</p>	<p>As mentioned above, a “single supplier” strategy had been selected by the Government of Belarus. In order to provide Belarus with meaningful advice and recommendations and for the purposes of the INIR mission, the mission team interpreted Milestone 2 “ready to invite bids” as “ready to negotiate the contract.” References to bid invitation specifications were interpreted as “specifications” for negotiating with a sole vendor. Considering the strategy selected and the actual status of the programme in Belarus, the INIR team focused its review to the aspects related to capabilities for the preparation and negotiation of the main contract. At the time of the INIR mission, DNPPC was engaged in negotiations of this main contract.</p> <p>As discussed in issue 10 (Human Resources), the organisation of DNPPC is well established and all relevant functions needed for the justification and negotiation of the contract, are in place and resourced with sufficient expertise. Managers and experts with sound experience in nuclear power projects have been hired from Russia and other countries. Additional expertise is consulted from scientific and other expert institutions when needed. The INIR team has considered the expertise as sufficient for the justification and negotiations of the contract and the upcoming activities. DNPPC has plans to increase the human resources steadily for the fulfilment of their duties in phase 3 and subsequent operation of the units.</p> <p>More information about the status of training and qualification and related plans can be found in the evaluation of issue 10.</p>	

	Condition 3.2: Milestone 2 reached Major gaps: None	
EVALUATION Condition 3.2		
Actions needed: no		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
SUGGESTIONS none		
GOOD PRACTICES: none		

3. Management		Phase 2
Condition 3.3: Bid evaluation criteria determined		
Basis for evaluation	Review observations	
Clear description of how bids will be evaluated. Evidence that criteria include any country specific requirements, safety and security aspects, the complete fuel cycle requirements, as well as financial, legal, technical and commercial aspects.	Not applicable, see conditions 3.1 and 3.2. <u>Condition 3.3: Milestone 2 reached.</u> <u>Major gaps: None.</u>	
EVALUATION Condition 3.3: not applicable for Belarus Project		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None		
GOOD PRACTICES None		

3. Management		Phase 2	
Condition 3.4: Contracting strategy established			
Basis for evaluation		Review observations	
Document reviewing contracting strategies and justifying the chosen approach. Approval that chosen strategy is consistent with national legislation. Implications recognized and plan to fulfil necessary requirements in place.		<p>Belarus had evaluated in an early stage of the nuclear power Programme programme possible approaches and contracting strategies with the support of the scientific institutions of Belarus. The state government came to the conclusion that they would pursue a turnkey contract with the Russian supplier Atomstroyexport with strong support from Russian Federation.</p> <p>The agreement between the Government of Belarus and the Government of the Russian Federation on Cooperation in Construction of the Nuclear Power Plant in the Territory of the Republic of Belarus was signed in March 2011.</p> <p>Basic conditions had been agreed; therefore, no tendering process was initiated. This decision is consistent with national legislation under certain conditions (“single supplier solution”)</p> <p>Condition 3.4: Milestone 2 reached Major gaps: None</p>	
EVALUATION Condition 3.4			
Actions needed			
SIGNIFICANT		MINOR	NO
			X
RECOMMENDATIONS			
none			
SUGGESTIONS			
none			
GOOD PRACTICES			
none			

3. Management		Phase 2	
Condition 3.5: Project management organization established			
Basis for evaluation		Review observations	
<ul style="list-style-type: none"> Justification of adequate staffing (number, 		Belarus Government had created a dedicated organization responsible for the construction, commissioning and	

<p>skills, experience)</p> <ul style="list-style-type: none"> • Roles and responsibilities within the organization clearly defined, particularly with respect to control of work and acceptance • Project reporting mechanisms defined • Acceptance procedures and criteria defined • Plans to acquire/develop required commissioning skills • Interfaces with other organizations defined and agreed on. 	<p>subsequent operation of the units, the State Institution “Directorate of Nuclear Power Plant Construction” (DNPPC). The organization of DNPPC includes 2 main bodies: project implementation (Project management) and preparation of the further operation and maintenance of the units (Operation Management) The roles and responsibilities are defined within this entity down to the level of individuals.</p> <p>About the existence of organizational structures and the definition of roles and responsibilities, the INIR team was informed that same provisions are made for the Regulatory body MES/GAN.</p> <p>For Sosny (TSO for MES/GAN), the team was also informed about the organizational structure. About 100 experts are licensed to provide expertise for the nuclear power programme. However the institutes are lacking in young employees as the average age of staff in Sosny is 52 years. Sosny has all organizational measures in place according to Belarus laws like an Organizational chart and descriptions of roles and responsibilities down to the level of individuals. Expertise which is not present must subcontracted from other national or international institutions. Sosny has contacts to international scientific institutions such as Kurchatov Institute, Argonne National Laboratory and Rossendorf Research Centre.</p> <p>Most important procedures for the implementation of the project exist in DNPPC and MES/GAN such as QA – procedures, Project manual, document management procedures and others, so there is evidence that a set of organizational procedures and instruments are available. It was also noted that Sosny will develop a QA manual in the near future for its organization, and one of its laboratories is already certified according to ISO 9001.</p> <p>At present interfacing activities across the organizations are primarily managed through committees, one of the most important committees is the “Interdepartmental Committee” which is responsible for the coordination of all the state organizations involved in the nuclear power Project.</p> <p>However interfacing activities should be supported by process descriptions. The presence of well-developed process descriptions is an indication about the status of a Management System which is in line with the IAEA Safety Requirement GS – R 3 considered as “state of the art” regarding the management of complex organization and projects and within the nuclear industry. This issue will be further discussed with condition 3.6.</p> <p>About the plans to acquire/develop required commissioning skills the team was informed that all necessary provisions will be included in the main contract with</p>
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	Atomstroiekспорт.	
	Condition 3.5: Milestone 2 reached	
	Major gaps: None	
EVALUATION Condition 3.5		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

3. Management		Phase 2
Condition 3.6: Management systems established		
Basis for evaluation	Review observations	
All participating organizations (including the regulatory bodies) established and have documented management systems which promote strong safety safeguards and security culture. Management systems are consistent with IAEA recommendations.	<p>The INIR team received information about the organization of the participating organizations in particular DNPPC, MES/GAN and Sosny as discussed with condition 3.5.</p> <p>While basic elements of a management system are already developed at least within the most relevant organizations DNPPC and MES/GAN such as Organizational Structures, Procedures and others instruments for the management of the organization, the INIR team could not identify process descriptions and other elements of a well-developed Management System such as measures to identify the effectiveness of processes. The INIR team concluded that the Management system is not complete and does not fulfil the recommendations set in IAEA GS – R 3. In particular with the large number of organizational procedures already in place, process descriptions may help to support the coordination of all those procedures.</p> <p>Furthermore, the INIR found that the concept of having process descriptions and other elements of a Management System are not well embedded within the organizations. Therefore the INIR team recommends that Belarus organisations should improve their understanding of development and implementation of</p>	

	<p>Management Systems according to IAEA GS-R-3 and consider training activities such as workshops with IAEA or other experts.</p> <p>Based on this, further action should be initiated to implement at least the most relevant elements of a Management System for the safe use of nuclear power within phase 3. The team was informed that MES/GAN has planned to start with the development of a management system which will fulfil the recommendations of GS – R 3 in 2013.</p> <p>Condition 3.6: Milestone 2 not reached</p> <p>Major gaps: Yes, Major Gap Identified</p> <p>The basic elements of a Management system had been set up within the nuclear power programme. However according to the recommendations set up with IAEA GS – R 3, some important elements like process descriptions to cover interfacing aspects between processes and other elements of a Management system are missing. Thus the INIR team considers the Management system as not complete as expected for the fulfilment of Milestone 2.</p>
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EVALUATION Condition 3.6

Actions needed

SIGNIFICANT	MINOR	NO
	X	

RECOMMENDATIONS

R-3.6 No. 1 Belarus organizations supporting or supervising the nuclear power programme should improve their understanding of development and implementation of Management Systems according to IAEA GS-R-3 including the setup of the most relevant process descriptions related to the nuclear power plant operation and consider training activities such as workshops with IAEA or other experts.

SUGGESTIONS

None

GOOD PRACTICES

none

4. Funding and Financing	Phase 1
Condition 4.1: Adequate funding for the NEPIO provided	
Basis for evaluation	Review observations

Clear evidence (such as a documented budget of finances and resources with evidence of actual expenditure) that enough resources have been made available to the NEPIO to carry out an adequate review.	<p>Belarus had funded all activities needed in Phase 1 and 2 by Government budgets. During the preparatory stage the activities were financed from the national budget: in 2001-2005 within the framework of the State Scientific and Technical Programme «Energy – 2005» and in 2006-2010 within the framework of the State Scientific and Technical Programme «Nuclear and Physical Technologies for the National Economy of Belarus».</p> <p>This funding had included all provisions for the NEPIO activities as well as the other activities e.g. the funding of technical support organizations, the development of Human resources in all governmental organizations related to the nuclear power programme programme and the relations with international Agencies etc. INIR team has considered the funding of activities in phase 1 and 2 as appropriate.</p> <p><u>Condition 4.1:</u> Milestone 1 reached. <u>Major gaps:</u> none.</p>	
EVALUATION Condition 4.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
GOOD PRACTICES		
none		
SUGGESTIONS		
none		

4. Funding and Financing	Phase 1
Condition 4.2: Strategies for funding and financing established	
Basis for evaluation	Review observations
<p>- An analysis deriving the funding requirements, as a function of time, for each of the following elements:</p> <p>(a) Initial infrastructure;</p> <p>(b) Socio-political acceptance;</p> <p>(c) Creation or hiring of expertise;</p> <p>(d) Creation and continuation of a competent regulatory body;</p> <p>(e) Creation of expertise for competent project management and operating staff;</p> <p>(f) Security arrangements;</p> <p>(g) Safeguards arrangements;</p>	<p>Recently the funding of the nuclear power Programme including the NPPS has been accomplished.</p> <p>Based on an Intergovernmental Agreement the funding of the programme will be provided by a state export loan from the Russian Federation for NPP construction (up to 90% of the value of contracts for the delivery of goods, execution of works and provision of services).</p> <p>The remaining financing resources (10% of payments) will be covered by governmental budgets or can be raised from foreign investments.</p> <p>According to the Law on the Use of Atomic Energy</p>

<p>(h) Management of radioactive waste(including long term storage);</p> <p>(i) Nuclear power plant decommissioning.</p> <p>It is important that all the required skills and the level of competency required are matched to the requirements identified under issue 10. Human Resource Development. At this stage there will be significant uncertainties, so maximum and minimum values should be evaluated.</p> <ul style="list-style-type: none"> - An evaluation of financing options and economic viability taking account of government and owner/operator capabilities and credit worthiness. Options may include: <p>(a) Total financing and ownership by the government;</p> <p>(b) Export financing;</p> <p>(c) Local financing;</p> <p>(d) Complete private funding.</p> <ul style="list-style-type: none"> - An analysis of financial risks and strategies to manage the risks. - Evidence of understanding of financial implications of national and international legal frameworks. 	<p>the operating organization is responsible for the design and subsequent treatment of operational radioactive waste. In addition according to Article 31 in the Law on the Use of Atomic Energy the operating organization has to establish a fund of financing of works aimed at maintaining and increasing of safety of the nuclear installation and (or) storage facility. The procedures of forming and using this fund will be established by the President of Belarus.</p> <p>According to article 21 in the 2008 Law on the Use of Atomic Energy the operating organization must form the fund for decommissioning.</p> <p><u>Condition 4.2:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> none</p>
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EVALUATION Condition 4.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		

4. Funding and Financing	Phase 2
Condition 4.1: Strategy for management of financial risks available	
Basis for evaluation	Review observations
<ul style="list-style-type: none"> - Document identifying level of borrowing intended and nature of guarantees. - Risk Management Plan identifying all the key financial risks, their owner, likelihood, consequence, how they are being controlled and 	<p>The funding of the nuclear power Programme programme after phase 1 and 2 is mainly based upon the Intergovernmental agreement between Belarus and the Russian Federation. Through this agreement 90% will be covered by the state export loan from Russian</p>

<p>mitigated, including the nature of any guarantees. These need to cover the impact of a significant event on: prolonged shutdown, public liabilities, delays in construction, regulatory delays, government/public intervention.</p>	<p>Federation. The remaining 10% will be allocated from state budget or can be raised from foreign investments.</p> <p>A dedicated risk management plan had not been developed yet, however such elements as interest rates, rise of prices and other conditions had been considered in the contract. In the Self-Evaluation Report it is stated that the “Financial risks will be determined at the stage of preparation of contractual documents for NPP construction.”</p> <p>The INIR team considers this as a minor gap for the phase 2; however a risk management plan should be prepared in particular considering typical risks with NPP projects such as delays in licensing or construction.</p> <p><u>Condition 4.1:</u> Milestone 2 reached</p> <p><u>Major gaps:</u> No major gaps, but minor gap identified</p>	
<p>EVALUATION Condition 4.1</p> <p>Actions needed</p>		
SIGNIFICANT	MINOR	NO
	X	
<p>RECOMMENDATIONS</p> <p>none</p>		
<p>SUGGESTIONS</p> <p>S-4.1 No. 1</p> <p>Belarus should consider developing a financial risk management plan. The financial consequences of common risks related to nuclear power programmes like delays in licensing or construction should be taken in consideration.</p>		
<p>GOOD PRACTICES</p> <p>none</p>		

<p>4. Funding and Financing</p> <p>Condition 4.2: Funding and financing plan available</p>		<p>Phase 2</p>
<p>Basis for evaluation</p>	<p>Review observations</p>	
<p>Means of funding the regulatory body established. Report comparing financial performance against the plan approved at milestone 1 in</p>	<p>Funding of state organizations is through Government budgets. This includes regulatory bodies, scientific support as well as the DNPPC. Annual budgets are developed according to Governmental rules covering issues like</p>	

order to demonstrate a sound budgeting, monitoring and control process; funding identified at milestone 1 was made available during Phase2. The document should also clearly identify lessons learned and actions taken.

Phase 3 financing plan for selected site matched to vendors plan including all national commitments for participation in construction, for operator costs, regulator costs, other stakeholders, emergency planning.

For each element and for the aggregated requirements, a ratio of financing achievement approaching 90% i.e.: mobilized/committed financial resources, demonstrated.

- Resource requirements estimated and committed.

salaries, training, travel costs, provision of technical and other equipment as usual.

DNPPC bear the costs for expertise support required by them from other institutions through their own budget.

Budget control instruments are well developed as well as related reporting instruments.

INIR team considers the financial support from Government to all institutions involved in the national programme as appropriate and well managed.

The 2008 Law On the Use of Atomic Energy states that the operating organization is obliged to deduct financial resources to the following funds: fund for decommissioning of nuclear installations (article 21), fund of financing the works on maintaining and increasing safety of nuclear installations (article 31). The procedures of forming and using this fund will be established by the President of Belarus.

Following documents had been issued regarding these issues:

- Edict of the President of Belarus «On approval of the procedure of formation of fund of decommissioning of nuclear installation and (or) storage facility» (24 months after the approval of architectural design);
- Edict of the President of Belarus « On approval of the procedure of formation and using of fund for financing the works on maintaining and increasing safety of nuclear installation and (or) storage facility» (24 months after the approval of architectural design);
- Resolution of Council of Ministers of Belarus «On approval of amount and procedure of formation of fund for financial provision of the operation's liability» (30 months after the approval of architectural design).

Furthermore according to “Justification of investment to the NPP construction” cost for management of spent fuel and radioactive waste will be included in operating costs during operation of Belarusian NPP.

The INIR team concludes that appropriate plans had been developed in phase 2 about the further activities needed to

	<p>complete the funding schemes for waste management, decommissioning of the NPP and financial arrangements for their undertaking.</p> <p><u>Condition 4.2:</u> Milestone 2 reached.</p> <p><u>Major gaps:</u> none.</p>	
EVALUATION Condition 4.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

5. Legislative Framework Condition 5.1: Adherence to all relevant international legal instruments planned		Phase 1
Basis for evaluation	Review observations	
<p>A plan approved by the government identifying the relevant international legal instruments to which the State will become party. The plan should include: the timescale for adherence and the actions, timescales and resources required to implement the instruments. At a minimum, the following instruments should be covered:</p> <p>(a) Convention on Early Notification of a Nuclear Accident;</p> <p>(b) Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency;</p> <p>(c) Convention on Nuclear Safety;</p> <p>(d) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive waste management;</p> <p>(e) Convention of Physical Protection of Nuclear Materials and its Amendment;</p> <p>(f) Vienna Convention on Civil Liability for Nuclear Damage, the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage and the Convention on Supplementary Compensation for Nuclear Damage;</p>	<p>Belarus is a party to most of the relevant international legal instruments adopted under the IAEA auspices except the Amendment to the Convention on Physical Protection of Nuclear Material. Also, Belarus has signed the Additional Protocol but it has not yet been ratified.</p> <p>It is also noted that Belarus is considering joining the Convention on Supplementary Compensation for Nuclear Damage.</p>	

<p>(g) Comprehensive Safeguards Agreement between the State and the IAEA*</p> <p>(h) Revised Supplementary Agreement concerning the provision of Technical Assistance by the IAEA.</p> <p>*The IAEA encourages Member States to consider concluding the Additional Protocol.</p>		<p><u>Condition 5.1</u>: Milestone 1 reached. <u>Major gaps</u>: None.</p>
<p>EVALUATION Condition 5.1</p> <p>Actions needed :</p>		
SIGNIFICANT	MINOR	NO
		X
<p>RECOMMENDATIONS</p> <p>none</p>		
<p>SUGGESTIONS</p> <p>none</p>		
<p>GOOD PRACTICES</p> <p>none</p>		

<p>5. Legislative Framework</p> <p>Condition 5.2: Plans for national nuclear legislation to be enacted</p>		<p>Phase 1</p>
<p>Basis for evaluation</p> <p>A plan approved by the government for completion of the national nuclear legislation. The plan should include: the timescale for approval and the actions, timescales and resources required to enact the planned legislation. The plan should cover:</p> <p>(a) Establishing an effectively independent regulatory body;</p> <p>(b) Establishing an authorization system, responsibilities of the operator, inspection and enforcement;</p> <p>(c) Formulating principles and requirements for each subject area (e.g. radiation protection, radiation sources, nuclear installations, radioactive waste management and spent fuel, decommissioning, mining and milling, emergency preparedness, transport of radioactive material);</p> <p>(d) Establishing compensation mechanisms for nuclear damage;</p> <p>(e) Implementing IAEA safeguards;</p> <p>(f) Implementing import and export controls of nuclear</p>	<p>Review observations</p> <p>A plan of development of a comprehensive nuclear legislation was approved by the Ministry for Emergency Situations in September 2004.</p> <p>A list of legal documents for carrying out nuclear activities was approved by the First Deputy Prime-Minister of Belarus on March 09, 2009.</p> <p>Belarus has already adopted a number of legal documents governing the use of nuclear energy. Belarus also mentioned that it is currently developing further legal instruments to supplement or modify the existing ones.</p>	

<p>material and items;</p> <p>(g) Formulating security principles, including physical protection of nuclear material and facilities.</p> <p>- A plan identifying other laws to be prepared or amended. The plan should include: the timescale for approval and the actions, timescales and resources required to enact amended legislation. The plan should also cover:</p> <p>(a) Environmental protection (air and water quality and wildlife protection);</p> <p>(b) Emergency preparedness and management;</p> <p>(c) Occupational health and safety of workers;</p> <p>(d) Protection of intellectual property;</p> <p>(e) Local land use controls;</p> <p>(f) Foreign investment;</p> <p>(g) Taxation;</p> <p>(h) Roles of national government, local Government, stakeholders and the public;</p> <p>(i) Financial guarantees.</p> <p>Further details are available in the IAEA Handbook on Nuclear Law [13].</p>	<p><u>Condition 5.2:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> None.</p>
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EVALUATION Condition 5.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
R-5.2 No. 1.		
SUGGESTIONS		
S-5.2 No. 1		
GOOD PRACTICES		
GP-5.2 No. 1		

5. Legislative Framework		Phase 1
Condition 5.3: Consultation planned with national stakeholders about the legislative framework		
Basis for evaluation	Review observations	
Documented evidence that relevant stakeholders have been identified and	Belarus indicated that every draft law has been subject to a consultation process and circulated to all the relevant ministries	

consulted and the resulting comments have been satisfied or acted upon.	for their feedback and comments. As regards technical regulations, Belarus indicated that prior to their adoption these texts are published on an official website where every interested party can provide its comments. <u>Condition 5.3</u> : Milestone 1 reached. <u>Major gaps</u> : none.	
EVALUATION Condition 5.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS R-5.3 No. 1		
SUGGESTIONS S-5.3 No. 1		
GOOD PRACTICES GP-5.3 No. 1		

5. Legislative Framework		Phase 2
Condition 5.1: International legal Instruments governing nuclear activities in force		
Basis for evaluation	Review observations	
Evidence that the State has adopted relevant international legal instruments governing nuclear activities, in particular: (a) The Convention on Early Notification of a Nuclear Accident. (b) The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. (c) The Convention on Nuclear Safety. (d) The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. (e) The Convention of Physical Protection of Nuclear Material and its Amendment. (f) The Vienna Convention on Civil Liability for Nuclear Damage, the Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage and the Convention on Supplementary Compensation for Nuclear Damage. (g) Comprehensive safeguards agreement between	Belarus is a party to most of the relevant international legal instruments adopted under the IAEA auspices: - Convention on Nuclear Safety, - Convention on Early Notification of a Nuclear Accident, - Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, - Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, - Convention on Physical Protection of Nuclear Material, - Vienna Convention on Civil Liability for Nuclear Damage and its amending Protocol, - Comprehensive Safeguards Agreement. The INIR team noted that while Belarus is a Party to the Convention on Physical Protection of Nuclear Material	

<p>the State and the IAEA. (h) Revised Supplementary Agreement concerning the provision of technical assistance by the IAEA.</p>	<p>(CPPNM), it has not accepted the Amendment to the CPPNM. However, the INIR team has been informed that Belarus is considering accepting the amendment. Belarus has also indicated that the internal process for the ratification of the Additional Protocol is ongoing.</p> <p><u>Condition 5.1</u>: Milestone 2 reached. <u>Major gaps</u>: No major gaps, only minor gaps identified.</p>	
EVALUATION Condition 5.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-5.1 No. 1 Belarus may consider accepting the amendment to the Convention on Physical Protection of Nuclear Material adopted in 2005		
GOOD PRACTICES		
none		

5. Legislative Framework		Phase 2
Condition 5.2: A comprehensive nuclear law is enacted and in force		
Basis for evaluation	Review observations	
<p>Evidence that the State has promulgated national nuclear legislation, including the following main elements:</p> <p>a) Establishing an independent regulatory body with clear functions. b) Establishing an authorization system, responsibilities of the operator, inspection and enforcement c) Formulation of principles and requirements (for each subject area) d) Establishing compensation mechanisms for nuclear damage e) Implementing IAEA safeguards f) Implementing import and export controls of nuclear material and items g) Formulation of security principles including</p>	<p>Belarus has an extensive legislative framework governing nuclear activities. It comprises numerous presidential decrees and orders, and laws.</p> <p>The INIR team has been informed that according to Article 137 of the Constitution of Belarus all decrees and orders of the President of Belarus in the area of nuclear energy have been enacted without special authority given by a law. Therefore, these decrees and orders have priority over laws.</p> <p>In 2007, the President of Belarus issued an order establishing Gozatomnadzor as a sub-division within the Ministry for Emergency Situations carrying out regulatory functions.</p> <p>Several other laws of a general nature are related to</p>	

physical protection of nuclear materials and facilities.

nuclear activities and ionizing radiation. However, the Law on the use of atomic energy enacted in 2008 specifically addresses the use of nuclear energy in Belarus.

The INIR team noted that the 2008 Law purports to establish the institutional framework for the nuclear power development and the related regulatory control regime. The 2008 Law puts in place a system of regulatory authorities (Ministry for Emergency Situations, Ministry of Health, Ministry for Natural Resources and Protection of the Environment and other State bodies). While the Ministry for Emergency Situations is identified as the main regulatory body in the field of nuclear and radiation safety, the 2008 does not establish a clear delineation of responsibilities between these different authorities.

Although the INIR team was informed that the Ministry for Emergency Situations is an independent regulatory body, the provision of the 2008 Law on the responsibilities of the Ministry of Energy and of the Ministry of Emergency Situations as regards the administration of the nuclear power programme may need to be clarified.

While the INIR team has been informed that the enforcement of legislative and regulatory requirements and the penalties are covered in other laws, the 2008 Law does not make a reference to the applicable provisions and the enforcement process, including powers of inspectors to enforce the legislative and regulatory requirements.

The INIR team noted that the 2008 Law does not fully cover the general principles of nuclear safety. Furthermore, the chapter devoted to spent nuclear fuel and radioactive waste management does not adequately address this issue but rather covers the state system for the accountancy of nuclear material, spent fuel, radioactive waste and radiation sources.

As regards physical protection of nuclear material, the INIR team noted that the entities having some responsibilities in this area are not identified as such in the 2008 Law.

The chapter devoted to “liabilities” covers two different subjects that should not be dealt with in the same chapter i.e.: civil liability for nuclear damage (articles 35 to 37) and violations of the provisions of the laws governing the use of nuclear energy (article 38).

The 2008 Law contains provisions relating to the compensation of damage in case of a radiation accident.

	<p>However, compensation of nuclear damage in case of a nuclear accident is a specific issue and the terms used in the law should be consistent with the 1997 Vienna Convention on Civil Liability for Nuclear Damage, to which Belarus is a Party. In addition, the provisions contained in the 2008 Law are not fully consistent with the principles of the 1997 Vienna Convention.</p> <p>Condition 5.2: Milestone 2 not reached.</p> <p>Major gaps: Yes, a major gap has been identified</p> <p>The 2008 Law does not adequately address a number of issues such as radioactive waste and spent fuel management, civil liability for nuclear damage and the enforcement process.</p>
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EVALUATION Condition 5.2

Actions needed

SIGNIFICANT	MINOR	NO
X		

RECOMMENDATIONS

R-5.2 No. 1. Considering that a number of issues such as the management of radioactive waste and spent fuel, civil liability for nuclear damage, and the enforcement process* are not adequately addressed, the relevant legislation should be revised.

*Explanatory note for enforcement process: the 2008 Law does not contain provisions relating to the inspection programme of the regulatory body as well as the power of the inspectors to take enforcement measures. The Law should establish the range of sanctions applicable or contain a reference to the relevant provisions of the Penal Code, Administrative Code, etc.

SUGGESTIONS

none

GOOD PRACTICES

none

5.3 Legislative Framework	Phase 2
Condition 5.3: All legislation dealing with the nuclear power programme developed, promulgated and in force	
Basis for evaluation	Review observations

<p>Evidence that the State has adopted other laws relevant to a nuclear power programme, in particular in the following areas:</p> <ul style="list-style-type: none"> a) Environmental protection b) Emergency preparedness and management c) Occupational health and safety of workers d) Protection of intellectual property e) Local land use controls f) Foreign investment g) Taxation h) Roles of national government, local government, stakeholders and the public i) Financial guarantees <p>Further detail is available in the IAEA Handbook on Nuclear Law.</p>	<p>The INIR team was informed that some laws have been adopted to take into consideration issues related to a nuclear power programme. Some legal documents are still being reviewed.</p> <p><u>Condition 5.1</u>: Milestone 2 reached. <u>Major gaps</u>: No major gaps, only minor gaps identified.</p>
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EVALUATION Condition 5.3		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-5.3 No. 1 Belarus should further pursue efforts to review and amend related laws to a nuclear power programme.		
GOOD PRACTICES		
none		

6. Safeguards	Phase 1
Condition 6.1: Obligations under NPT and non-proliferation treaties and other international instruments, recognized	
Basis for evaluation	Review observations
<p>Evidence that obligations under all relevant treaties and relevant international instruments are recognized and understood;</p> <p>A plan produced by the NEPIO covering the conclusion of the Treaty on the Non-Proliferation of Nuclear Weapons and additional</p>	<p>As a result of its commitment to nuclear non-proliferation regime, Belarus has become party to NPT (1993).</p> <p>Recognizing its obligations under the NPT, Belarus has already concluded the comprehensive safeguards agreement (CSA) with the IAEA (1995) and signed the additional protocol thereto (AP) (not yet ratified). Belarus is also a member of Nuclear Suppliers Group (NSG).</p>

<p>non-proliferation treaties, as applicable;</p> <p>Evidence that approaches undertaken by one or more countries with existing nuclear power programmes have been reviewed and information learned has been translated into the national context.</p>	<p>MES/GAN has signed an agreement on co-operation in the area of State nuclear regulatory activities (including safeguards) with the SNRIU, Ukraine and is preparing similar agreements with Armenian and Turkish regulatory authorities. It has been reported that information learned from this cooperation is and will be further used for development and strengthening of existing State nuclear regulatory functions (including safeguards) related to the construction and future operation of the NPP.</p> <p><u>Condition 6.1:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>
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EVALUATION Condition 6.1		
Actions needed:		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

6. Safeguards		Phase 1
Condition 6.2: Development, implementation and enforcement of safeguards framework, including SSAC establishment, planned		
Basis for evaluation	Review observations	
<p>A plan produced by the NEPIO covering the conclusion of a CSA (comprehensive safeguards agreement) with the IAEA and the establishment of an SSAC (State system of accounting for and control of nuclear material) with requisite authorities.</p> <p>A plan produced by the NEPIO covering the drafting, implementation and enforcement of national legislation, policies and procedures relevant to safeguards.</p>	<p>CSA has been in force since 1995 and AP was signed in 2005.</p> <p>SSAC has been established by the 2008 Law on the Use of Atomic Energy and Governmental Resolution No.P-2, followed with a set of Ministerial and MES/GAN's regulations and instructions.</p> <p>Gosatomnadzor, within the Ministry of Emergency Situations performs SSAC functions at the State level. The legislative and regulatory framework provides for the main elements of safeguards implementation. In addition, some amendments to existing documents and/or new ones are planned or being already prepared (by MES/GAN and</p>	

		Sosny). <u>Condition 6.2:</u> Milestone 1 reached. <u>Major gaps:</u> None.
EVALUATION Condition 6.2		
Actions Needed:		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
R-6.2 No. 1		
SUGGESTIONS		
S-6.2 No. 1		
GOOD PRACTICES		
GP-6.2 No. 1 Well co-ordinated “in depth approach” used for the SSAC establishment through a set of regulatory/normative instruments in 1995, starting from basic legal provisions, followed by Governmental and Ministry of Emergency Situations resolutions, with the detailed MES/GAN’s regulations and instructions at the end.		

6. Safeguards		Phase 1
Condition 6.3: International requirements for any existing nuclear facilities or locations outside facilities met		
Basis for evaluation	Review observations	
If any nuclear facilities or locations outside facilities (LOF) already exist (e.g. locations associated with nuclear fuel research), evidence that all safeguards obligations are being met. Where applicable, evidence that the commitments from any resulting action plan are being met.	<p>All Design Information Questionnaires (DIQ) have been submitted (including required information for declared LOFs).</p> <p>Two Facility Attachments (FA) are in force and 1 FA under preparation (catch all Material Balance Area for LOFs).</p> <p>Nuclear Material Accounting Reports are being submitted in timely and correct manner.</p> <p>Facility Records are available to IAEA inspectors for in field verification.</p> <p><u>Condition 6.3:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>	
EVALUATION Condition 6.3		
Actions needed		

SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
GP-6.3 No. 1 There are requirements that oblige an applicant to have in place an internal Nuclear Material Accounting and Control instruction/procedure as a pre-condition for issuing a license for nuclear material possession/use.		

6. Safeguards		Phase 2
Condition 6.1: Terms of international safeguards agreement in place		
Basis for evaluation	Review observations	
Comprehensive safeguards agreement and associated subsidiary arrangements with the IAEA in force.	<p>CSA has been in force since 1995, Subsidiary Arrangements, General Part since 1999.</p> <p>Two FAs are in force, 1 FA is under preparation (being reviewed by the IAEA).</p> <p>AP was signed in 2005. The INIR team was informed that the internal process of its ratification is ongoing. However, it has not been completed yet.</p> <p><u>Condition 6.1</u>: Milestone 2 reached. <u>Major gaps</u>: None.</p>	
EVALUATION Condition 6.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		

SUGGESTIONS

S-6.1 No. 1 To strengthen its nuclear regulatory infrastructure in the area of safeguards implementation, Belarus should continue to pay attention to the completion of the AP ratification process.

GOOD PRACTICES

none

6. Safeguards**Phase 2****Condition 6.2: SSAC established and operational**

Basis for evaluation	Review observations
<p>Evidence of an established and technically competent SSAC, including designation of national authority and definition of role, responsibilities and reporting methods.</p> <p>Plans to maintain the technical competence and provision of necessary resources to the SSAC to match the development of the nuclear power programme.</p> <p>Evidence through information exchange with the IAEA that the SSAC has a good understanding of the principles of safeguarding a nuclear power plant, including the type of equipment the IAEA may install in the facility.</p>	<p>Based on review of the submitted documents and interviews conducted by INIR team, it appears that the SSAC has been established, national (State) authority has been designated with defined roles, responsibilities and reporting requirements and its staff has completed several training courses devoted to the SSAC's role and functions.</p> <p>Based on interviews conducted by INIR team, it appears that the State regulatory authority is understaffed (in the area of safeguards) and the establishment of an SSAC at the level of the NPP operator has not started yet. However, both MES/GAN and the Ministry of Energy (Directorate for construction of NPP) have plans to match the development of the nuclear power programme and are continuously working on further strengthening of their safeguards competences and increasing their resources.</p> <p>Based on its experience with implementing safeguards at existing nuclear facilities, as well as knowledge learned through SSAC training courses, documents received for the review and results of interviews, it appears that Belarus has a basic knowledge of the main principles of safeguarding a nuclear power plant.</p> <p><u>Condition 6.2</u>: Milestone 2 reached. <u>Major gaps</u>: None.</p>

EVALUATION Condition 6.2**Actions needed**

SIGNIFICANT	MINOR	NO
		X

RECOMMENDATIONS

R-6.2 No. 1

SUGGESTIONS

S-6.2 No. 1 To be ready for smooth implementation of safeguards in the constructed NPP, further consult safeguards related approaches conducted by other States constructing a new NPP and take active part in the relevant IAEA training courses (e.g. “On Safeguards by Design”, “On Nuclear Material Accounting and Reporting”).

S-6.2 No. 2 Belarus may consider further assistance of the IAEA in implementing CSA and AP requirements, as applicable, through a national training course and/or an ISSAS mission.

GOOD PRACTICES

GP-6.2 No. 1

6. Safeguards		Phase 2
Condition 6.3: Early safeguards relevant information provided to IAEA		
Basis for evaluation	Review observations	
Information on technology and list of designs being included in the BIS. If a design had already been chosen, design information submitted to the IAEA with any specific national variations.	<p>Very early NPP design information has been submitted to the IAEA (the letter of 2008-02-04).</p> <p>However, despite the NPP design had been already chosen, no preliminary version of DIQ “pre-construction phase” has been submitted to the IAEA yet. The INIR team was informed during the conduct of interviews that such a document is being prepared.</p> <p><u>Condition 6.3:</u> Milestone 2 not reached. <u>Major gaps:</u> No major gaps, but minor gap identified.</p>	
EVALUATION Condition 6.3		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
R-6.3 No. 1 The preliminary version of DIQ “pre-construction phase” should be submitted to the IAEA through the ordinary safeguards channels.		
SUGGESTIONS		
S-6.3 No. 1		
GOOD PRACTICES		
GP-6.3 No. 1		

6. Safeguards		Phase 2
Condition 6.4: Specific legislation and relevant safeguards procedures in place		
Basis for evaluation	Review observations	
Legislation reviewed by the IAEA and any outstanding actions implemented.	<p>The 2008 Law On the Use of Atomic Energy, several Resolutions of the Government and MES/GAN's regulations and instructions are in place. However, as learned from the self-assessment and interview process, an update will be needed upon the results of their adequacy and consistency analysis, as well as a review by the IAEA.</p> <p>Development of the necessary regulations which would allow implementation of AP has not been completed and reviewed by the IAEA.</p> <p><u>Condition 6.4:</u> Milestone 2 not reached. <u>Major gaps:</u> No major gaps, but minor gap identified.</p>	
EVALUATION Condition 6.4		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
R-6.4 No. 1 The analysis of adequacy, consistency of the existing and development of the necessary new regulations which would allow full scope implementation of CSA and AP requirements, as applicable, should be completed (and reviewed by the IAEA, upon request).		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

7. Regulatory Framework		Phase 1
Condition 7.1: Development of an adequate regulatory framework planned		
Basis for evaluation	Review observations	

<p>Clear plans to develop necessary activities such as those described in the IAEA Safety Standards publication GS-R-1 [6]. This will include:</p> <ul style="list-style-type: none"> (a) Establishment of authorization process; (b) Development of regulations and guides; (c) Safety review and assessments; (d) Inspection; (e) Enforcement; (f) Coordination with other national and international bodies; (g) Public information; (h) Provision of adequate supporting technical resources. <p>- Evidence that the functions of the proposed regulatory body will be developed, with assistance and advice from those whose expertise is well established and recognized. This could include independent consultants, support organizations or international organizations.</p>	<p>The INIR team reviewed the self-evaluation report, conducted interviews and reviewed supplemental information provided and in general concludes that the intent of this criterion--clear plans to develop necessary activities--to be met. The two areas of evidence are the extensive legislative and regulatory framework that has been implemented to support the introduction of nuclear power project and the draft Strategy, Action Plan and Cooperation Plan prepared by Gosatomnadzor. This draft strategy assesses their current situation and identified actions for enhancing its capacity.</p> <p>The INIR team acknowledged Belarus use of extensive assistance from bi-lateral cooperation with Russia and other countries and well as from international organizations IAEA and the EU.</p> <p><u>Condition 7.1:</u> Milestone 1 Reached <u>Major gaps:</u> None</p>
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EVALUATION Condition 7.1		
Actions needed		
SIGNIFICANT	MINOR	NO X
RECOMMENDATIONS		
R-7.1 No. 1		
SUGGESTIONS		
S-7.1 No. 1		
GOOD PRACTICES		
GP-7.1 No. 1		

7. Regulatory Framework		Phase 2
Condition 7.1: Independent nuclear regulatory body established		
Basis for evaluation	Review observations	

A report evaluating the relevant regulatory functions against those described in IAEA Safety Requirement GS R 1 [6] and the criteria defined in the IAEA Integrated Regulatory Review Service (IRRS) methodology. Information available should include:

- a. clear description of roles, responsibilities, organization structure, staffing requirements, areas requiring expert and consultant services
- b. documented formal management system
- c. training plans to provide required SQEP staff for all roles
- d. plans for the development and maintenance of an appropriate safety, security and quality structure
- e. links established with other international regulatory bodies, regional and international regulator forums
- f. clear definition of information requirements at each stage of construction and definition of hold points and process for clearance
- g. agreed process for certification of operators
- h. agreed policy and process with respect to public availability of information including dealing with commercially sensitive information
- i. process for keeping of records
- j. preconstruction safety report assessed or clear evidence that there is sufficient competence to complete assessment prior to construction of chosen design
- k. codes and standards to be used listed for each area. Evidence of understanding of requirements. Justification of mix of national, foreign and international standards and codes. Areas covered should include:

- i. transport, storage and handling of nuclear and radioactive material
- ii. radiation protection including remediation
- iii. site licensing
- iv. siting
- v. environmental protection
- vi. design
- vii. construction
- viii. commissioning
- ix. decommissioning
- x. security and safety

The INIR team considered two main pieces of legislation that defines roles and responsibilities of related to regulatory functions for nuclear safety--other aspects of regulatory framework related to security, safeguards, and radioactive waste are discussed within the specific sections of this report. The Presidential Order № 565 “About some measures on NPP construction” of November, 12 2007, identifies GAN as a sub-division of the Ministry for Emergency Situations with the functions of state oversight and monitoring of compliance in the field of nuclear safety and radiation protection. In the 2008 Law on The Use of Atomic Energy, the Ministry of Emergency Situations is identified as the main regulatory body in the field of nuclear safety and radiation protection. The Law also defines regulatory functions for other organizations.

The INIR team noted that for coordination amongst organizations with regulatory responsibilities, the Resolution of the Council of Ministers of Belarus “On a working group to coordinate the implementation of state supervision of nuclear power plant construction.” is approved (N° 1791, 30.12.2011). This Resolution provides MES/GAN with regulatory authority for coordination and was considered to be a good practice.

The INIR team also considered the draft Strategy, Action Plan and Cooperation Plan for Capacity Building to Enhance Gosatomnadzor of the Ministry for Emergency Situations (herein draft MES/GAN Action Plan). The INIR team acknowledges the comprehensive assessment and actions identified to strengthen GANs capacity to support near-term actions. The INIR team notes that MES/GAN with assistance from the European Commission performed a self-assessment using the IAEA SAT against GS-R-1. The result of this self-assessment contributed to the draft.

The INIR team considered the regulatory functions identified as Phase 1 criteria and Phase 2 criteria in relation to this condition.

The licensing stages include; design, siting, construction, operation, and decommissioning. For each phase, prior to authorization by MES/GAN, there is a necessary Presidential Decree supporting the overall activity.

For siting, initial feasibility study and site/preparation was performed by the Design Scientific-Research Republican Unitary Enterprise “Belniplerienergoprom”. The Decree of the President of Belarus № 418 of September, 15 2011 «On Siting And Design Of The Nuclear Power Plant In Belarus» was followed by a site license application, subsequent regulatory review and assessment, culminating in the issuance of a site license 31 May 2012.

The design license is related to the designer--not specific to the design. The design license was considered not to be necessary. The INIR team notes the construction permit license application will be next. The INIR team noted operating license phase

<p>xi. waste management xii. emergency planning</p> <p>One approach to reviewing the above is to request an IAEA Safety Review Service (Graded IRRS).</p>	<p>omitted from 2008 Law, but is covered by Presidential Decree “On licensing of certain activities” of September, 1 2010.</p> <p>The INIR team noted the action in the strategic plan on development of the programme for assessment. The INIR team considers this a top priority from an implementation perspective of authorization activities.</p> <p>Regarding safety review and assessment especially related to the preliminary safety analysis report: the INIR team discussed the current capability of MES/GAN and Sosny and agrees with MES/GANs statement in the draft MES/GAN Action Plan, “The Licensing process and the related safety assessment of first NPP in Belarus are the most challenging duties of Gosatomnadzor in short-, mid- and long-term perspective.” The INIR team also considered this to be the same issue for the Technical Support Organizations (Sosny and others). The Human Resource Development aspects are further elaborated within Issue 10. The INIR team discussed the reference plant concept with the counterpart. The counterpart acknowledged both the benefits and limitations regarding its use.</p> <p>Regarding inspection, the Self-evaluation identified limitations regarding ability to inspect facilities. The INIR team notes the draft Decree of the President of Belarus (No 322) to address authority limitations is in progress and should be finalized. The INIR team also acknowledged initial development of regulatory inspection programme based on Russian approach.</p> <p>Regarding enforcement; through discussion, the counterpart identified an action to analyse whether there was sufficient specificity of enforcement actions necessary for effective oversight of a nuclear power plant within the existing Administrative Code of Belarus and the Criminal Code of Belarus. As far as the enforcement mechanism within these Codes, the counterpart was satisfied, including the providing inspectors with necessary authority on site.</p> <p>The topics of formal management systems, the process for keeping records and plans for development and maintenance of an appropriate safety, security and quality structure are discussed within Issue 3 Management.</p> <p>Regarding training plans, the INIR team addresses this issue within Issue 10, Human Resource Development.</p> <p>Regarding links other international regulatory bodies, regional and international regulator forums; the INIR team acknowledges the extensive amount of cooperation for this issue as it relates to regulatory development. As identified in the draft MES/GAN Action Plan, MES/GAN has extensive cooperation with the European Union. Given its size, current capacity, and the near term activities, MES/GAN should consider prioritizing the actions in its integrated action plan to identify donor organizations with realistic targets to meet project demands. MES/GAN may consider continuing efforts to join the</p>
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Regulatory Cooperation Forum as a means for collaboration between donor countries on the assistance provided.

Regarding information requirements at each stage of construction and definition of hold points and process for clearance, the INIR team acknowledged the licensing legislation and regulations for the information requirements for each licensing stage and through discussion with the counterpart, and MES/GAN discussed the cooperation with Rostechnadzor and intended us of Russia practice for control over processes and building a certification process for systems, structures, and components.

Regarding operator certification, MES/GAN discussed the intended use of the Russia certification system of personnel.

Regarding policy and process for availability of public information, MES/GAN confirmed the handling of sensitive information will be handled according to existing legal framework. MES/GAN noted an action to analyse policy and process for the availability of public information in the draft MES/GAN Action Plan. Further consideration of this topic is in Issue 11, Stakeholder Involvement.

Regarding regulations and guides, the Self Evaluation identified that the activities of the MES are regulated by Presidential Order 756. From the discussion, the INIR team clarified the difference between Technical Codes of Practice and Ministry Resolutions the two main types of requirements and conditions for issuance of each. The draft MES/GAN Action Plan identified a long list of regulations/documents to be developed or updated within the next several years. The INIR team also considered Presidential Decree 26 July 2010, that for construction of the NPP under Turn-key conditions, it is acceptable to use technical normative legal acts of a country which would be a vendor, provided that these acts are in compliance with international standards.

Lastly, regarding codes and standards, the INIR team sampled several Technical Codes of Practice of the exhaustive list for each element with respect to licensing of NPP. The INIR team acknowledges both the regulations in place and the identified action to develop or update from 2012 to 2015. The INIR team cautioned the timing of the scheduled issuance of these regulations on regulatory stability associated with the project timeline to review a construction license application in 2013. The counterpart responded that it was to formally adopt more of the Russian regulatory framework.

In conclusion, the INIR team would like to acknowledge the comprehensive draft MES/GAN action plan and the nuclear power plant project schedule, specifically the INIR team highlights the challenges ahead of MES/GAN and its support licensing and regulatory review and assessment of a construction license in 2013.

2. Regarding the possibility of hosting an Integrated Regulatory Review Service mission, the INIR team acknowledged the performance of Self-Assessment against GS-R-1 and its contribution to the Draft MES/GAN Action Plan. The Team

	<p>discussed that an IRRS should be considered within the upcoming Technical Cooperation cycle 2014/2015.</p> <p><u>Condition 7.1</u>: Milestone 2 not reached. <u>Major gaps</u>: Yes, major gaps identified</p> <ol style="list-style-type: none"> 1. Insufficient processes and capacity to perform licensing and regulatory review and assessment (including TSO) of construction license for the first NPP. 2. Incomplete regulatory framework to support licensing of the first NPP. <p>Strengthening of the Regulatory Infrastructure: Given the project timeline to issue a construction license in 2013, MES/GAN should prioritize and aggressively pursue the Actions presented in draft MES/GAN Action Plan especially related to licensing and review and assessment of first Belarusian NPP. This should be done within the framework of a management system. At the functional level, develop the responsibilities, process flow and necessary procedures for performing a construction license review. Given the time constraints, MES/GAN should leverage regulatory framework of the vendor country of origin.</p>
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EVALUATION Condition 7.1

Actions needed

SIGNIFICANT	MINOR	NO
X		

RECOMMENDATIONS

R-7.1 No. 1 Belarus should provide the necessary human and financial resources to allow MES/GAN to perform its supervisory obligations related to the licensing and review and assessment of the first Belarusian NPP. Funding provisions should also include any necessary contractual support services.

R-7.1 No. 2 MES/GAN should prioritize and expeditiously pursue the Actions presented in draft MES/GAN Action Plan, especially those related to licensing and review and assessment of first Belarusian NPP

R-7.1 No. 3 MES/GAN should finalize regulations to support construction license application review process.

R-7.1 No. 4 Belarus should finalize the necessary revision to the relevant Decree of the President of Belarus (No 322) to provide necessary legal authority to carry out supervision/oversight activities.

SUGGESTIONS

S-7.1 No. 1 Belarus should consider expanding its bi-lateral cooperation to include technical expertise in the regulatory review of preliminary safety analysis report associated with licensing of

first NPP.

GOOD PRACTICES

GP-7.1 No. 1

For coordination amongst organizations with regulatory responsibilities, the Resolution of the Council of Ministers of Belarus “On a working group to coordinate the implementation of state supervision of nuclear power plant construction.” is approved (N° 1791, 30.12.2011). This Resolution provides MES/GAN with regulatory authority for coordination and was considered a model of good practice.

8.Radiation Protection		Phase 1
Condition 8.1: Hazards presented by nuclear power plant operation recognized		
Basis for evaluation	Review observations	
<p>Analysis covering:</p> <p>(a) The additional hazards resulting from expanding activities to include power reactor operation, fuel transport, waste management and storage and decommissioning;</p> <p>(b) The requirements of the IAEA Safety Standards for these additional hazards;</p> <p>(c) The impact on the existing regulations and practises.</p> <p>Evidence of interactions by specialists with countries operating nuclear power.</p>	<p>The mission team observed that the additional hazards associated with the operation of nuclear installations have been fully recognised. References are included in several documents published with respect to new nuclear programme in the country (e.g. Justification of investments into nuclear power station construction in Belarus, Environmental Impact Assessment).</p> <p>The existing regulations for radiation protection have been developed in accordance with IAEA Safety Standards including hazards related to nuclear installations.</p> <p>Based on the nuclear power programme the existing regulation has been updated (e.g. in 2010 Order of the Ministry of Health on “Hygienic requirements for design and operation of nuclear power plants” were published). The draft amendments of basic technical norms (NRB-2000 and OSP-2002) have been prepared (draft NRB-2012 and OSP-2012) and are expected to be approved in year 2012.</p> <p>Belarus actively participates in IAEA programmes covering radiation protection area. The National Commission on Radiation Protection established a good cooperation with neighbouring countries such as Ukraine, Poland, Russian Federation, etc.</p> <p><u>Condition 8.1:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>	
EVALUATION Condition 8.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		

SUGGESTIONS

none

GOOD PRACTICES

none

8.Radiation protection**Phase 1****Condition 8.2: Enhancements to national regulations and infrastructures planned**

Basis for evaluation	Review observations
<p>- Plan to implement a larger radiation protection programme, including the testing, commissioning, operation, shut-down and decommissioning stages of a nuclear power programme.</p> <p>- Plan to meet the intent of IAEA Safety Standards Series GS-R-1 [6] and the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources (Safety Series No. 115) [7].</p> <p>- Clear understanding of the organizational issues that need to be addressed; clarity whether the existing regulatory body will be expanded or a new body created, and an implementation plan.</p> <p>- Clear and adequate plans for the development of appropriate skills and experience.</p>	<p>The mission team understood that there are plans and on-going activities to upgrade the existing framework. Action plans addressing these issues have been established for the implementation of law and orders, e.g.:</p> <ul style="list-style-type: none"> • “On the use of atomic energy”, 2008, • “On introduction of amendments and additions to the Law of Belarus “On radiation safety of the population”, 2008, • Order of the President “On certain measures for nuclear power plant construction”, 2007. <p>Existing legislation is planned to be amended with respect to latest IAEA standards (GSR Part 1, GSR Part 3). The main technical norms (regulations) in the area of radiation protection (NRB-2000 and OSP-2002) were identified to be updated in 2012.</p> <p>Presidential order No 565/2007 established GAN as a subdivision of the MES with the function of monitoring of compliance in the field of nuclear and radiation safety. Organizational aspects of the Department of Nuclear and Radiation Safety (Gosatomnadzor-GAN) are under development.</p> <p>Programme for development of capabilities for regulatory body staff has been established. Implementation of state programme of staff training for nuclear power sector is under way (“State programme of staff training for nuclear power sector of the Republic of Belarus for 2008-2020”).</p> <p><u>Condition 8.2: Milestone 1 reached.</u> <u>Major gaps: None.</u></p>

EVALUATION Condition 8.2**Actions needed**

SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
GP-8.2 No. 1 A prompt response in transposing new international radiation protection standards (IAEA GSR Part 3) into national regulations contributes to an enhanced level of protection of the population and to a safe use of nuclear energy in the country.		

8.Radiation Protection		Phase 2
Condition 8.1. Actions to prepare adequate radiation protection programmes undertaken		
Basis for evaluation	Review observations	
<p>Radiation monitoring and protection programmes in place for occupational exposure of workers, the public and environment, and capable of dealing with construction and any training of staff at other locations.</p> <p>An environment monitoring programme in place. The 'preliminary results will constitute the 'finger print' to be used in comparing with the values to be recorded during the commercial operation.</p> <p>The appropriate equipment and systems for radiation monitoring are included in the BIS.</p> <p>The owner/operator plan for radiation protection has been submitted to the regulator for review.</p>	<p>Occupational exposure control of workers is in place. The National Environmental Monitoring system is in operation. The Unified System for Control and Recording of Individual Exposure Doses and State Dosimetric Register has been developed and put in operation.</p> <p>Monitoring systems in regions closer to NPP in neighboring countries are maintained with higher capabilities (4 automated radiation monitoring system). Mobile dosimetry units are available at MH, MES, and MNRE). Data included in the EIA documents should be used as reference data in comparing with future data (operation). In case of areas affected by Chernobyl accident detailed studies are available.</p> <p>Specification of equipment and systems for radiation monitoring for the nuclear power site is under development. An agreement taking into account the national potential for ensuring measuring systems is planned to be negotiated with the vendor.</p> <p>The operator plan for radiation protection is expected to be developed after having more information from the vendor. However, it was noted that there is some information already available on the nuclear power plant and plans could begin development now.</p> <p><u>Condition 8.1:</u> Milestone 2 reached. <u>Major gaps:</u> None.</p>	
EVALUATION Condition 8.1		

Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
GP-8.1 No. 1 The operation of Unified System for Control and Recording of Individual Exposure Doses covering all groups of population contributes to an effective protection of the population.		

8.Radiation Protection		Phase 2
Condition 8.2: Expansion of appropriate infrastructures planned		
Basis for evaluation	Review observations	
<p>Evidence that all relevant organizations have analysed skill requirements associated with implementing a nuclear power programme.</p> <p>Requirements for expansion of regulatory and specialist organizations defined, funded and recruitment/training plans in place.</p>	<p>Training of regulatory authority (MES/GAN) experts is in progress in accordance with the State Programme of Staff Training for Nuclear Power Sector in the Republic of Belarus for 2008-2020. Experts from different organizations are also trained under their programme.</p> <p>The Presidential order No. 565/ 2007 and the 2008 Law on the Use of Atomic Energy established a regulatory authority (MES/GAN), the operator (DNPPC), and assigned Belnpienenergoprom to be the general designer. Joint Institute of Power and Nuclear Research – Sosny was designated as TSO. The draft Resolution of the Council of Ministers on further scientific support for the development of nuclear power sector and technical support for regulatory body has been prepared. Taking into account the added responsibilities in the area of radiation protection related to the nuclear power programme, the Ministry of Health should consider strengthening its capabilities and allocate necessary resources (and organizational coordination) in area of radiation protection and dose assessment.</p> <p><u>Condition 8.2: Milestone 2 reached.</u></p> <p><u>Major gaps: No major gaps, but minor gap identified.</u></p>	
EVALUATION Condition 8.2		
Actions needed		

SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
<p>S-8.2 No. 1 Requirements on funds, staffing of specialist organisation involved in radiation protection activities should be regularly updated with respect to stage of implementation of the nuclear programme.</p> <p>S-8.2 No. 1 The Ministry of Health should consider strengthening its capabilities and allocate necessary resources (and organizational coordination) in the area of radiation protection and dose assessment.</p>		
GOOD PRACTICES		
none		

9. Electrical Grid		Phase 1
Condition 9.1: Electrical grid requirement considered		
Basis for evaluation	Review observations	
<p>A complete analysis of the inclusion of a nuclear power plant into the existing and future electrical grid. The analysis should include:</p> <p>(a) The existing grid capacity and the expected growth by the date of the planned nuclear power plant start-up;</p> <p>(b) The historical stability and reliability of the electrical grid and its adequacy to support safe and reliable operation nuclear power plant.</p> <p>(c) The historical and projected peak and trough hours and the corresponding energy demand;</p> <p>(d) Consideration of available nuclear power plant designs to identify those with output consistent with required grid performance and reliability, taking into account:</p> <p>(i) The feasibility of operating the future nuclear power plants as a base plant (100% or near 100% power);</p> <p>(ii) The percentage represented by the capacity of the nuclear power plant in relation to the total capacity of the grid.</p> <p>Potential location of the nuclear power plant and its behaviour with regard to:</p>	<p>“Belenergoproject” developed the scheme of output of the Belarusian NPP power with consideration of all relevant aspects as stability of the grid, redundancy in supply and delivery of energy. The results had been approved by the Ministry of Energy of Belarus and agreed with the interested parties. The scheme of output presupposes organization of 7 power supply lines with voltage of 330 kV, including the use of the existing overhead lines.</p> <p>With the aim of determining the specific reconstruction volumes and repair of the existing electrical grid 110-750 kV which will be utilized in the scheme of output of NPP power, at the stage of development of the construction and architectural designs their actual technical state was assessed. Based on the respective surveys and examinations, their reconstruction was stipulated in the required volume.</p> <p>For outside power supply of the production</p>	

<p>(i) 'Radial or star' shape grid;</p> <p>(ii) 'Ring' shape grid;</p> <p>(iii) Assessment of the risk posed by the potential isolation of the nuclear power plant in the case of a star shape grid or a not fully closed ring shape grid if the nuclear power plant is located at the extreme end of a grid branch.</p> <p>The potential for local or regional interconnections to improve the grid characteristics, such as reliability. Where improvements are identified, the feasibility of funding should be considered.</p> <p>The number of plants in the grid (or connected to the off-site start-up line) with 'black start-up capability', in the case of a regional blackout during the nuclear power plant operation. A large number of 'black start-up capability' plants improve the possibility of a fast restoration of the off-site energy to the nuclear power plant.</p> <p>Adequate measuring, monitoring and communications to be covered between the national and regional grid controllers and the future nuclear power plant.</p> <p>The need for a truly independent 'start-up line'.</p>	<p>facilities and construction site of NPP the substation of 110 kV "Vilia" was put into operation in 2012. Power supply for this substation is provided with 4 overhead transmission line of 110 kV. After completion of the construction of NPP the construction of a cable line connection of 110 kV "Vilia – NPP auxiliary transformer" is stipulated to provide power backup for NPP auxiliaries.</p> <p>By October 2011 architectural designs were completed for the overhead lines needed.</p> <p>With the forecast growth of loadings at the Ostrovets power unit the improvements within the Belarus grid will make it possible to increase reliability of power supply for consumers and implement possible repair and post-emergency regimes with the loss of power supply.</p> <p>"Belenergoproject" developed also the scheme of communications by the fiber and optical communication lines and high frequency channels for the grid management.</p> <p><u>Condition 9.1</u>: Milestone 1 reached. <u>Major gaps</u>: None.</p>
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EVALUATION Condition 9.1		
Actions needed		
SIGNIFICANT	Minor	No
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
None		

9. Electrical Grid	Phase 2
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Condition 9.1: Detailed studies to determine grid expansion, upgrade or improvement undertaken	
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Basis for evaluation	Review observations
<p>Plans to address the grid requirements associated with the inclusion of the NPP. The plans should include:</p> <ul style="list-style-type: none"> a) enhancement and/or expansion compatible with the increased generating capacity b) achieving the overall grid stability and reliability requirements for safe operation c) justification of the reliability/capacity of the ‘off site power’ for the NPP. Redundant independent ‘off site lines’ should be considered d) provision of grid specifications into the BIS e) plans and programmes to train regional and national grid controllers covering the installation of an NPP in the grid (behaviour, transients, etc.) f) plans to define a procedure addressing the interactions between the NPP and the grid including protocols to be agreed with the controller covering connection and disconnection of the plant and urgent and emergency procedures. 	<p>According to the identified needs of the grid and with the completion of architectural design in October 2011, further steps had been initiated to realize the plans.</p> <p>Detailed project implementation plans had been developed and synchronized with the NPP construction schedule. According to those plans the grid construction and improvements of existing transmission lines will be ready to support the units 1 year ahead of relevant commissioning stages. The completion of 4 lines are scheduled for September 2017, the remaining 3 transmission lines for unit 2 are scheduled for completion in December 2018.</p> <p>The INIR team considers that all actions needed had been initiated, to ensure that the grid is ready when required for the commissioning and subsequent power operation.</p> <p><u>Condition 9.1:</u> Milestone 2 reached. <u>Major gaps:</u> None.</p>

EVALUATION Condition 9.1:		
Actions needed:		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

9. Electrical Grid Condition 9.2. Plans, funding and schedule for grid enhancement available	Phase 2
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Basis for evaluation		Review observations	
Evidence that funding and schedules for grid enhancements, compatible with the foreseen construction, testing and commissioning have been approved and that delivery times of towers, lines and components, substations and switch yards are consistent with the construction schedule.		.A contract for development of the development of the necessary grid infrastructure is signed. It includes the construction of transmission lines, substations and all other improvements in the existing grid. Funding is already agreed through loans from international banks. <u>Condition 9.2:</u> Milestone 2 reached. <u>Major gaps:</u> None.	
EVALUATION Condition 9.2			
Actions needed			
SIGNIFICANT	MINOR	NO	
		X	
RECOMMENDATIONS			
none			
SUGGESTIONS			
none			
GOOD PRACTICES			
none			

10. Human resources		Phase 1
Condition 10.1: Necessary knowledge and skills identified		
Basis for evaluation	Review observations	

<p>- Analysis identifying the competences needed by each of the future organizations. The analysis should be sufficiently detailed to allow the full implications to be assessed and to support a detailed plan for phase 2 (see below).</p> <p>- Evidence that key stakeholder organizations have participated in the development and review of the above analysis.</p>	<p>Belarus Government had recognized in a rather early stage of its nuclear power Programme programme the importance for the development of the required Human Resources.</p> <p>This is reflected in various reports and notes like the “Analytical note to the manning table of the NPP staff and on the issue of personnel training” issued in 2006. The report was prepared by “BelTEI” together with all organizations concerned and coordinated with the National Academy of Sciences of Belarus.</p> <p><u>Condition 10.1</u>: Milestone 1 reached. <u>Major gaps</u>: None.</p>	
<p>EVALUATION Condition 10.1</p> <p>Actions needed</p>		
SIGNIFICANT	MINOR	NO
		X
<p>RECOMMENDATIONS</p> <p>none</p>		
<p>SUGGESTIONS</p> <p>none</p>		
<p>GOOD PRACTICES</p> <p>none</p>		

10. Human resources	Phase 1
Condition 10.2: Develop and maintenance of human resource base planned	
Basis for evaluation	Review observations
<p>- A human resource (HR) development plan that identifies the human resources needed by each of the future organizations. There should be a detailed implementation plan for phase 2 which should also address the key requirements of a complete nuclear power programme. The details for phase 3 can be developed during phase 2. The plan should address:</p> <p>(a) Bulk manpower needs per phase;</p> <p>(b) Breakdown by knowledge, skills and discipline per phase;</p> <p>(c) Flow of manpower to other projects (e.g. future nuclear power plants);</p>	<p>The first steps had been followed by intense activities in 2007 / 2008 regarding the development of Human resource development plans.</p> <p>2 main outputs demonstrated the efforts of those activities.</p> <ul style="list-style-type: none"> • The “State Programme on the staff training for the nuclear energy in the Republic of Belarus for the years 2008-2020”, • The creation of the “Republican commission on the issues concerning staff training for the nuclear energy branch of the Republic of Belarus”.

<p>(d) The human resources that are available in key stakeholder organizations;</p> <p>(e) The human resources that are expected to be recruited/developed nationally;</p> <p>(f) The external human resources that are needed to augment national resources and how they will be secured;</p> <p>(g) The development and training of national competence (through schools, universities, institutes, industry);</p> <p>(h) The need for support from a vendor country and any specific training programmes with vendors;</p> <p>(i) How trained staff will be retained, addressing both the competition from other markets/organizations and the impact of project delays.</p> <ul style="list-style-type: none"> - Evidence that key stakeholder organizations have participated in the development and review of the above plan. - Strategies for developing an appropriate safety culture and management in each of the future organizations. - Proposals for qualification and certification of key staff. 	<p>The “State Programme on the staff training for the nuclear energy in the Republic of Belarus for the years 2008-2020” is not only a road map for the development of Human resources, it includes also comprehensive plans about the development of Human Resource in different organizations upon those have to elaborate their specific Human resource development plans.</p> <p>The State Programme includes:</p> <ul style="list-style-type: none"> • Introduction of new major discipline specific graduate programmes in Belarus universities; • Education in foreign universities; • Training of NPP personnel. <p>The Republican commission on the issues concerning staff training for the nuclear energy branch of the Republic of Belarus” created in 2008 coordinates all these activities of the different organizations and follows up on a regular basis the progress of the programme. It is led by the Deputy Minister from the Ministry for Education as the responsibility for the coordination of this programme is with the Ministry of Education. However, all other ministries in particular the Ministry of Energy and the Ministry of Emergency Situations are represented in the commission as well as the National scientific and educational institutions.</p> <p>The INIR team considers the establishment of such a commission as a Good Practice for the development of Human Resources in a country embarking nuclear power.</p> <p>INIR team also had recognized that within this framework more detailed programmes like “Staffing of the nuclear power plant construction in the region” had been developed. There is also evidence that training in safety culture had been considered in the Training programmes.</p> <p><u>Condition 10.2:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>
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EVALUATION Condition 10.2		
Actions needed:		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		

SUGGESTIONS

None

GOOD PRACTICES

GP-10.2 No. 1

The implementation of a National, high level committee coordinating all issues concerning nuclear power staff training in Belarus and represented by all stakeholder organizations is considered as a good practice. It demonstrates the commitment of the Government to the importance of qualified Human resources and will support the effective development of all institutions involved.

10. Human Resources		Phase 2
Condition 10.1: Knowledge and skills needed in organizations for Phase 3 and operational phase identified		
Basis for evaluation	Review observations	
<p>-Evidence that staff have appropriate skills and experience particularly in:</p> <ul style="list-style-type: none"> a) types of proven designs of NPP and potential suppliers b) main technical characteristics of potential plants c) nuclear and radiation safety d) owner/operator technical and legal inputs (funding and financing, legal framework, site, regulations, licensing process, grid characteristics, etc.) e) contracting methodologies f) project Management g) national and local participation capabilities and targets h) public information and communications. <p>- Evidence that appropriate staff have visited operating plants similar to those being considered.</p> <p>- Evidence that all the skills required to write bid specifications and evaluate submitted information are in place. This should cover technical, management and commercial issues.</p> <p>- An analysis of the competences needed in all organizations involved in Phase 3 and initial operational phase. The analysis should:</p> <ul style="list-style-type: none"> a) include contributions from each of the 	<p>The DNPPC is responsible for the development of the NPP project and the future operation of the units. At present 28 functions are included in the organization chart, containing more than 70 staff members, most of them already placed. The functions includes Engineering sections of all the relevant disciplines like Reactor, Turbine and Electrical division, Project Management and sections dealing with QA aspects, contracting and procurement and various administration functions. 5 members of the management team have sound management experience in nuclear power plants in Russia and other states and some had Management functions in recent VVER Projects abroad like China and Iran. Others have Management and Working experience in their respective disciplines like Turbine engineering or Electrical engineering. They gained knowledge in project Management and job specific QA through the involvement in other large industrial projects in the energy sector or other industrial complex. If required, DNPPC is able to resource its organization not only from Belarus territory but also by experts from Russia or Ukraine as there are no restrictions for free flow of workforce within these countries.</p> <p>The team identified few functions not included in the current organization but necessary for future activities like safeguard functions or radioactive waste management. These functions should be added with the continuous evaluation and adaptation of the organization plan over time in phase 3. These functions are not currently needed in the DNPPC organization. Experts in very specific disciplines like specialists of legal aspects for the negotiation of main contract are consulted from other state organizations or</p>	

<p>organizations</p> <p>b) reflect realistic expectations regarding the owner's scope of supply and that of other organizations</p> <p>c) ensure an appropriate balance of skills between operating organization, regulator and specialist organizations with adequate training in each</p> <p>d) include consideration of a remuneration structure that will ensure that all organizations are adequately staffed</p> <p>e) address the needs of support organizations (e.g. for maintenance, refurbishment, replacement) including appropriate training programmes</p> <p>f) address requirements for changes to national education infrastructure.</p> <p>- Recruitment and training programmes covering:</p> <p>a) technical requirements (including nuclear specific technical capabilities)</p> <p>b) business requirements</p> <p>c) public relations requirements</p> <p>d) fuel procurement</p> <p>e) construction management and commissioning</p> <p>f) operation and maintenance</p>	<p>scientific institutions when needed or from abroad.</p> <p>INIR team considers the status of Human Resources within the DNPPC as sufficient for the current needs of the project in particular for the evaluation and negotiation of the contract. Furthermore, the INIR team acknowledges that a dedicated functional unit responsible for the workforce planning and preparation exists within Operating Organization.</p> <p>Within the framework of State Programme on the staff training for the nuclear energy in Belarus for the years 2008-2020, DNPPC has developed a detailed workforce and development plan which had identified the necessary competences of the Human resources for the phase 3. The plan and its fulfillment are also followed up by the National Committee for Nuclear Training.</p> <p>For the role of Regulatory Body INIR team focused on MES/GAN as this organization was considered as the most relevant Organization regarding NPP licensing and independent supervision functions. MES/GAN has the following basic tasks in the field of nuclear and radiation safety:</p> <p>-development of state regulation and supervision in the field of nuclear and radiation safety;</p> <p>-ensuring the control over the execution of legislation in the field of nuclear and radiation safety.</p> <p>At present 12 functions are included in the organization chart, containing more than 40 staff members, most of them already placed. The functions include nuclear safety, radiation safety and inspection as well as a section dealing with licensing issues. Experience of managers and experts in the field of radiation protection and control of radiation sources is good, while knowledge and experience with nuclear power is limited.</p> <p>According to the intention of the NPP project, a construction license is planned to be issued in 2013. This will result in a workload peak starting in the very near future coinciding with the review of a construction license application. MES/GAN has a draft plan to increase its staff and capacity starting in 2013. According to this, the amount of staff related to nuclear safety will be more than doubled.</p> <p>Sosny, the major Technical Support Organization supporting MES/GAN will provide additional manpower and expertise; however, according to current Training plans for 2012 and 2013, they also need resources to accomplish their own competence and capabilities.</p> <p>Both the Sosny and the MES/GAN organization is subject of major Training and Education projects provided by</p>
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IAEA TC projects and the EC. This will require the delivery of Manpower to these training programmes during a period where those same resources will be urgently needed for the regulatory review and assessment of a construction license application.

In consideration of all these aspects and facts, the INIR team concludes that quantity of staff and the related expertise as not sufficient to bear the near term licensing activities in proper time and quality. This will challenge the independent review of documentation such as Accident Analysis, Analysis of NPP Technological Systems, and Risk Analysis etc. that are part of the SAR.

The INIR team acknowledge that the situation was identified with the Self-Evaluation Report and the need for significant actions is recognized.

In this regard MES/GAN had developed an updated draft Organization Plan as mentioned above. However these actions are not supportive to the timeline of the project and the time needed to make this workforce effective.

The INIR team consider the situation as a major gap in the fulfilment of milestone 2 as a consequence of Workforce planning in phase 2 not being consistent with the project timeline. The lack of National resources for regulatory body cannot be solved in short term because the first batch of highly educated experts trained in the national educational institutes will be delivered in 2012/2013 and they will first need some additional job specific training and on job experience in the organisation before becoming effective.

The Workforce planning in MES/GAN and its TSO's should therefore urgently and thoroughly reviewed and updated, taking in consideration the near term project intension of receiving construction license and the intense international training activities scheduled for 2012-2014.

Based on the updated workforce planning, MES/GAN can identify in which areas external resources are needed to cover short term requirements for the licensing process and can initiate subsequent activities for funding and contracting external support. According to the governmental agreement between Belarus and the Russian Federation the INIR team expect that workforce from Russian regulatory body will be provided to overcome this issue.

As for the long term work force needs of MES/GAN and Sosny the team was informed that graduates from the various Educational Institutes will be utilized in the National organizations. Considering the work force situation in the Regulatory Body, the national action plan

	<p>for the supervision of Training and Qualification in the Nuclear Power Sector should prioritize the staffing of its Governmental institutions in particular the Regulatory Bodies from this source.</p> <p><u>Condition 10.1:</u> Milestone 2 not reached.</p> <p><u>Major gaps:</u> Yes, major gap identified</p> <p>There is no evidence that regulatory body and Sosny has sufficiently identified the timeliness of Human resource development in Phase 2 for the fulfillment of the short term demands in Phase 3 to issue a construction license and to handle at the same time major training programmes already scheduled for 2012 – 2014.</p>
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EVALUATION Condition 10.1		
Actions needed:		
SIGNIFICANT	MINOR	NO
X		
RECOMMENDATIONS		
<p>R-10.1 No. 1 The Workforce planning in MES/GAN and its TSO's (mainly Sosny), should be urgently and thoroughly reviewed and updated, taking in consideration the near term plans of issuing a construction license in 2013 as well as the international training projects also scheduled concurrently for 2012-2014. Based on the results, subsequent activities for identification, funding and contracting of external support could be initiated.</p> <p>R-10.1 No 2 The staffing of the Regulatory Body with graduates provided by the state universities and other educational institutions from 2012 onwards should become a high priority in the HR action plans of Belarus.</p>		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

10. Human Resources	Phase 2
Condition 10.2: A plan to develop and maintain the human resource base in organizations for Phase 3 and operational phase is developed	
Basis for evaluation	Review observations

<p>Adequate training programmes for maintenance and operation and technical support personnel.</p> <p>Evidence of sufficient competence in key organizations to specify training requirements.</p> <p>Evaluation of the need for training abroad at operating plant similar to those being considered. Any necessary language training started or planned.</p> <p>Programmes in place for involvement of future operation and maintenance personnel with the construction and commissioning groups.</p> <p>Evidence that licensing requirements have been taken account of in training programmes, in order to remove the risk of start-up delays due to lack of licensed personnel.</p> <p>A human resource development plan that identifies the requirements of the owner and other key stakeholders during Phase 3 and initial plant operations. The plan should address the resources that are available, those that are expected to be recruited/developed nationally and the external resources needed to augment national resources.</p> <p>Key stakeholder organizations have participated in the development and review of the above plan.</p> <p>The BIS addresses what is required from the supplier with respect to the training and development of resources to carry out the owner and support responsibilities during commissioning, and initial plant operations.</p> <p>The BIS includes the provision of simulator training requirements.</p>	<p>The supervision of the “State Programme on the staff training for the nuclear energy in the Republic of Belarus for the years 2008-2020” is with the National Commission for Nuclear Training. The INIR team was informed about the status of Programmes in the most relevant organisations related to the HR workforce planning and the definition of training requirements.</p> <p>As for the operating organization a dedicated section is established which takes care for the workforce planning and development in DNPPC. At present, HR forecasts for Phase 3 and plans exist. Training Need analysis had not been completed yet and will be further developed within phase 3 with the support of the supplier.</p> <p>Furthermore, this section ensures that personnel development and training issues are considered in the right manner in the main contract. The team was informed that Training requirements will be included in the contract. According to this contract a training centre will be provided including a full scope simulator by the supplier. Training will be provided for a large portion of the operating staff in the training centre on site and in the Russian Federation. Practical training in VVER’s in operation and under construction or commissioning is included in the training provisions. The team concludes that the provisions needed for Phase 3 are existing for the operating organization.</p> <p>As for the regulatory body and its TSO, it appears to the INIR team that staffing and the training programmes lack the timeliness of the programmes in relation to the project milestones.</p> <p>With the corrective actions recommended in 10.1 it can be expected that the synchronization of the project demands with the HR workforce planning in the regulatory environment will improve.</p> <p>Another issue of regulatory body actions related to the qualification of NPP personnel is the setting up of licensing requirements related to the qualification of personnel.</p> <p>At present MES/GAN has not issued such kind of licensing requirements, but has stated that they are under development. However those requirements should be available in the early stages of phase 3 in particular their recognition in the main contract. Therefore the requirements should be completed rather soon for the successful development of Human resources.</p>
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	<p>Within the State Programme on the staff training for the nuclear energy in Belarus for the years 2008-2020 Belarus had established a very effective education programme in various Universities and other educational institutions to develop discipline specific experts needed in a nuclear power programme. It provides these students in an early phase with the specifics relevant for the safe use of nuclear power such as safety culture and other approaches. It minimizes the need for job specific training in the organizations that are expected to receive those graduates. This approach and its efforts were considered by the team as a Good Practice.</p> <p>The Educational Institutions had considered within the content of their specific education programmes the experience of educational institutions in neighboring countries in particular those of the Russian Federation as well as other international sources. They are familiar with the IAEA Systematic Approach to Training approach (SAT) and have stated that they will continuously improve their training programmes accordingly.</p> <p><u>Condition 10.2:</u> Milestone 2 reached.</p> <p><u>Major gaps:</u> No major gaps, only minor gap identified.</p>	
EVALUATION Condition 10.2		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-10.2 No. 1 MES/GAN should consider an early completion of licensing requirements related to the Qualification of Nuclear Power Plant Personnel, that they can be considered by the operating organization workforce plans for Phase 3.		
GOOD PRACTICES		
GP-10.2 No. 1 Belarus had established a very effective education programme to cover its need in developing the required work force for the nuclear power programme. Various Universities and other educational institutions had developed discipline specific education programmes, needed in a nuclear power programme. It provides these students in an early phase with the specifics relevant for the safe use of nuclear power such as safety culture and other approaches. The programme supports the National NP Programme with well-prepared graduates and minimizes the need for job specific		

training in the organizations that are expected to receive those graduates.

11. Stakeholder involvement Condition 11.1: Strong public information and education programme Initiated		Phase 1
Basis for evaluation	Review observations	
<ul style="list-style-type: none"> • Programmes to determine the degree of knowledge and receptiveness to the local use of nuclear power; • Public information programme and tools to clearly explain the reasons for the government interest in and the societal benefit resulting from the use of nuclear power; • A plan for interaction with the public, opinion leaders and other stakeholders, including neighbouring countries. 	<p>When Belarus began considering its nuclear power programme it engaged in surveys and reviews starting in 2005 to determine the level of knowledge and attitude for the use of nuclear power. These surveys were carried out in part by the Institute of Sociology of the National Academy of Sciences. The 2005 surveys indicated that 28.3% of a representative sampling of 2,000 persons responded positively towards nuclear power. Surveys done in 2011 have showed an increase of approval to 59.4%.</p> <p>In 2006 the Ministry of Energy developed “<i>Plan of measures to work with mass media on the topic of peaceful uses of nuclear energy, including construction of a nuclear power plant in the Republic of Belarus</i>”, approved by the First Deputy Prime-Minister of Belarus V.I. Semashko. The team was informed that it defines the main elements of a stakeholder engagement plan including the responsible Agencies. This plan was implemented in 2006-2008. A working group of high level representatives was established from ministries and other stakeholders to engage in information distribution and raising the awareness of the public for the nuclear power programme. Information centers were also established as well as coordinated opinion polls. The working group is no longer active since it achieved its stated goal.</p> <p>In May 20, 2008 the “<i>Plan of actions for organization of PR activities for the issues of development of nuclear power sector in the Republic of Belarus for 2008-2012, No. 709</i>” was approved by the Resolution of the Council of Ministers of Belarus. This plan continues stakeholder engagement process.</p> <p>Belarus is party to the Espoo Convention. The Ministry of Natural Resources was responsible for coordination of compliance with the requirement of the convention. The INIR team was informed that Belarus has followed the requirements of the Espoo convention and has had interactions with Poland, Lithuania, Latvia, the Russian</p>	

		Federation, and Austria. Belarus has had extensive consultations and public discussions, including holding meetings in neighbouring countries. <u>Condition 11.1: Milestone 1 reached</u> <u>Major gaps: None</u>
EVALUATION Condition 11.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		
SUGGESTIONS		
None		
GOOD PRACTICES		
None		

11. Stakeholder involvement		Phase 1
Condition 11.2: Need for open and timely interaction and communication regarding the nuclear power programme addressed		
Basis for evaluation	Review observations	
<ol style="list-style-type: none"> 1. Training programme to enable available senior spokespersons to interact with stakeholders; 2. Evidence of meetings held with key stakeholder groups and a plan of follow up actions and meetings; 3. A plan for appropriate public participation to ensure public acceptance of decisions made. 	<p>Each ministry in the Belarus government has an official press secretary. This press secretary is responsible for communication with the media and is a communications professional. The Ministry of Energy, and other agencies, have nuclear experts who have received training in how to communicate with the public. This was accomplished according to <u>Section 2 of Clause 9 of the State programme “Scientific and Technological Support of Nuclear Power Sector in the Republic of Belarus for the years 2009-2010 and up to 2020.”</u></p> <p>The INIR team was informed that since 2006 at least 1,673 meetings were held with 182,670 persons in attendance including 72 Non-Governmental Organizations (NGO) to discuss the nuclear power programme. This was done in part in accordance with the <u>Resolution of the Council of Ministers of Belarus No. 571, dated May 04, 2009 “On approval of the Procedure of discussion of issues in the area of the use of nuclear power with participation of public associations, other organizations and citizens.”</u></p> <p>The 2008 Law on the use of Atomic Energy (Article No. 40) has provisions for the rights of public participation in the decision making process.</p>	

	<p>Belarus is party to the Aarhus convention regarding stakeholder involvement and has adopted a “<i>Plan of measures for implementation by the Republic of Belarus of the provisions of the Aarhus Convention during design and construction of a nuclear power plant on the territory of the Republic of Belarus.</i>” As part of implementation on of this plan Belarus officials have planned meetings with stakeholders to discuss the key issues of implementation of the NPP construction project.</p> <p><u>Condition 11.2</u>: Milestone 1 reached.</p> <p><u>Major gaps</u>: None.</p>	
EVALUATION Condition 11.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
None		
SUGGESTIONS		
None		
GOOD PRACTICES		
None		

11. Stakeholder Involvement		Phase 2
Condition 11.1: Public information and education programme developed		
Basis for evaluation	Review observations	
<ol style="list-style-type: none"> For each of the main organizations (government, regulator, and operator), a clear statement of the role and responsibilities in proactive stakeholder management covering: public, local government, industry, media, NGOs (Non-government organizations), opposition groups, neighbouring countries. An inter-organization stakeholder management strategy, evidence of regular review meetings and integrated stakeholder management plans for each 	<p>There are several different laws, regulations, and other instruments that direct the stakeholder involvement activities in Belarus. The 2008 Law on the Use on Atomic Energy contains Articles 5, 6 and 8 that provide the main delineation of responsibility for engaging the public and other stakeholders for nuclear power. It provides that the government “...<i>determines the cases and procedure of discussion of questions in the field of use of atomic energy with participation of non-governmental organizations, other organizations, and citizens.</i>” Additionally, the INIR team was informed that the following is the hierarchy of laws, regulations, and other instruments that provide a clear statement and role of the responsibilities of stakeholder management:</p>	

<p>organization.</p> <p>3. Evidence of training and experience of spokespersons.</p> <p>4. Material produced in a range of media formats addressing all key stakeholder groups.</p> <p>5. Records of stakeholder meetings held and follow up actions taken.</p> <p>6. Evidence that local issues have been identified and addressed.</p> <p>7. Consultative Committee representing local interests established.</p> <p>8. Statement of regulator policy regarding availability of information to the public.</p> <p>9. Evidence that the role of the regulator is understood by stakeholders and that they are perceived as competent and independent.</p> <p>10. Evidence of on-going government communications regarding energy policy, the benefits of nuclear power and response to issues raised.</p> <p>11. Review of public acceptance through means such as opinion polls or meetings.</p> <p>12. Evidence of communications from operator and regulator explaining technology being used, why chosen and why safe.</p>	<ol style="list-style-type: none"> 1. Law on Protection of Environment; 2. Law on State Ecological Expertise; 3. Decree 19 May 2010 №755; 4. Technical Code of Practice Environmental Impact Assessment. <p>The INIR team was informed that since 2006, there had been at least 1,673 meetings involving 182,670 participants, including 72 NGOs. The main government organizers of these events were the Ministry of Information, the Ministry of Energy, and the DNPPC and included the participation of other ministries as necessary. This represents a type of stakeholder management strategy with evidence of regular meetings.</p> <p>Each ministry in the Belarus government has an official press secretary that is a communications professional and is responsible for communication with the media. These press secretaries receive some training and instruction on nuclear matters as needed. The Ministry of Energy, among other agencies, has nuclear experts who have received training in how to communicate with the public.</p> <p>The INIR team was informed that there had been extensive preparation and publication of information and educational materials (brochures, newsletters, etc.) and popular scientific literature on the development of nuclear power in Belarus. Some of this is carried out on a contractual and customized basis. Information on the implementation of NPP construction project in Belarus is updated regularly on the websites of government agencies. Every year the Ministry of Information make films and videos on construction of nuclear power plant in Belarus under the state order for production of social and political TV products. These programmes are often on the leading national television channels</p> <p>Local issues in Belarus are identified and addressed by the formation of local working groups that organize communication activities related to nuclear power development. This is directed in part by the Order of the Prime Minister 2008 No. 27p. On October 2007 the Deputy Minister of Information approved the participation of representatives of state national media to support public communication activities for the nuclear power programme.</p> <p>In the future NPP site of Ostrovets, meetings are organized with a variety of local stakeholders such as labor unions and the public concerning the issues of the development of nuclear power and construction of nuclear power plant. There is an information center on site that is managed by the DNPPC.</p> <p>MES/GAN is involved in communication activities related to providing information about the nature and work of a nuclear regulatory body. Their participation is developed in coordination with other national plans and activities. MES/GAN also</p>
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	<p>outsourced some of its public information activities.</p> <p>The INIR team was informed that MES/GAN is preparing a statement and strategy of regulator policy regarding availability of information to the public and is making provisions in this regard in its future plans. They indicated that MES/GAN has a website as part of the Ministry of Emergency Situations that currently allows for persons to contact the regulator via emails, mail, and scheduled visits to its main office in Minsk to answer questions. The INIR team stressed that a clear statement and strategy is needed for the public to have a good understanding of the role of the regulatory body and for the public's perception of the safety of the nuclear power programme in Belarus. In this way public trust in the capability of the regulator will be further strengthened.</p> <p>The Ministry of Energy and the Institute of Sociology of the National Academy of Sciences of Belarus regularly interviews the public on the complex issues related to the development of nuclear power in the country. The purpose is to identify major trends in public opinion.</p> <p>Preparation of information materials regarding the types of technology being used and its benefits and safety is stipulated in the State programme "<i>Scientific support of nuclear power development in the Republic of Belarus for 2009 - 2010 and the period up to 2020</i>", approved by the Council of Ministers on 28.08.2009 № 1116. The Ministry of Information implements the plan for the publication of literature on the development of nuclear power in Belarus. The Ministry of Energy together with the National Academy of Sciences prepares materials to be used during communication works with the public, as well as for posting on websites. In Minsk, a specialized exhibition called "<i>Atomexpo Belarus</i>" is held annually where a conference on the technology that has been chosen for nuclear energy development in Belarus is discussed with media coverage.</p> <p><u>Condition 11.1:</u> Milestone 2 not reached.</p> <p><u>Major Gaps:</u> No major gaps, but a minor gap identified</p> <p>MES/GAN stated that it is in the process of developing a statement of regulator policy regarding availability of information to the public, but has not completed it.</p>	
EVALUATION Condition 11.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
R-11.1 No. 1		

MES/GAN should complete a statement/strategy of regulator policy regarding availability of information to the public for the purpose of transparency and building trust in the regulatory body and for the public's perception of safety of Belarus's nuclear power programme.
SUGGESTIONS none
GOOD PRACTICES none

12.Site and supporting facilities		Phase 1
Condition 12.1: General survey of potential sites, conducted		
Basis for evaluation	Review observations	
<ul style="list-style-type: none"> - Report issued and approved identifying: <ul style="list-style-type: none"> (a) Requirements for nuclear power plant site evaluation; (b) Regional analysis and identification of potential sites; (c) Screening of potential sites and selection of candidate sites; (d) Comparison of candidate sites. - The requirements and screening criteria ensure adequate protection of the public and the environment from the effects of ionizing radiation and other factors arising from nuclear installations and are consistent with the requirements IAEA Safety Standards Series No. NS-R-3 [8]. - Evidence that the NEPIO consultants used for nuclear power plant site selection are competent and have experience in this area. 	<p>The INIR team notes the requirements for site evaluation are contained in Technical codes TCP 97/2007 – 99/2007 and 101/2007-102/2007 on siting of nuclear power plants have been issued.</p> <p>The INIR team notes that “The Act of selection of the place of land plot location for construction” has been concluded on December 20, 2008 and based on the analysis and screening of potential sites decreased the possible 74 sites to 3 candidate sites–Krasnopolyana site (Bykhov point), Kukshinovsk site (Schklov-Goretsk point), –Ostrovetsk site (Ostrovetsk point). A detailed evaluation has been made for last three sites.</p> <p>The requirements and criteria on siting were informed by the international guidance and summary information is available in the document on “Justification of investments to construction of NPP in the Republic of Belarus”. Two IAEA advisory missions in relation to site selection were performed in 2008. The scope of these missions was limited to considerations during the site survey stage; they were not site assessments.</p> <p>Relevant competent state authorities and organisations and the Ukraine company ENERGOPROJECT participated in the site selection process. Technical coordination has been provided by BELNIPIENERGOPROM, while the overall progress made was monitored by the State commission for selection of the place for nuclear power plant established under the Ministry of Energy.</p>	

		Condition 12.1: Milestone 1 reached. Major gaps: None.
VALUATION Condition 12.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

12. Site and supporting facilities		Phase 1
Condition 12.2: Selected site(s) justified		
Basis for evaluation	Review observations	
<p>Nuclear power plant site selection report approved by the NEPIO, clearly demonstrating:</p> <p>(a) All of the candidate sites identified during the site survey have been evaluated in order to select the site(s) for the nuclear power plant;</p> <p>(b) The selected site(s) are acceptable from all aspects and, in particular, from the nuclear safety point of view;</p> <p>(c) The noise and visual effects during the construction and operation of the future plant have been considered;</p> <p>(d) The selected site(s) do not disturb or limit the access to important archaeological objectives and do not modify the landscape unacceptably;</p> <p>(e) The selected site(s) do not affect individuals or communities, the government and local or regional organizations;</p> <p>- The nuclear power site selection report contains plans for additional studies and site investigations that will need to be performed during phase 2 in order to complete and refine the assessment of plant site characteristics.</p>	<p>Based on the decision of the State commission for selection of the place for nuclear power plant “The Act of selection of the place of land plot location for construction” has been concluded on December 20, 2008. Based on the research and exploration works, as well as infrastructure analysis the Ostrovets site has been selected as the priority site for the NPP location. Relevant information on clauses (a) - (e) is available in the document on “Justification of investments to construction of NPP in the Republic of Belarus”. Site relevant information is included also in the EIA report. Based on the technical work done, Presidential Order No 418 “On siting and design of NPP in Belarus” was issued on September 15, 2011.</p> <p>Additional studies are planned to be performed on the priority in connection with preparation of PSAR for construction license.</p> <p><u>Condition 12.2: Milestone 1 reached</u> <u>Major gaps: None</u></p>	

EVALUATION Condition 12.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

12. Site and supporting facilities		Phase 2
Condition 12.1: Detailed site characterization completed		
Basis for evaluation	Review observations	
<p>Evidence that the site(s) identified in the BIS are owned/available for use to the organization issuing the BIS.</p> <p>Report demonstrating ranking of possible sites and basis of the chosen site or sites.</p> <p>Evidence that the site(s) meets all siting requirements and the necessary characterization studies have been completed. These should cover:</p> <ul style="list-style-type: none"> a) integration into the grid b) geology and tectonic c) seismology d) heat removal capability e) hydrology f) demography g) meteorology h) environmental issues i) external Hazards j) local Infrastructure k) access l) legal issues m) security <p>Evidence that local legal, political and public acceptance issues have been identified and resolved or their resolution planned.</p>	<p>Belarus provided reference to the decision of the Grodno Regional Executive Committee, No 732, of 7 October 2009 in which the extraction of the land and assignment of the site area to DNPPC (operating organization) has been confirmed.</p> <p>The information on siting requirements a) – j) is available in the document on “Justification of investments to construction of NPP in the Republic of Belarus”. The other siting requirements (k, l, and m) are covered by the contract between operating organization and “ATOMSTROYEXPORT”. Information should be updated in relation with preparation of construction documentation (2013). A site license for the Ostrovets site has been issued to DNNPC on 31 May 2012.</p> <p>Conditions for public involvement have been established by Resolution 571/2009 “On adoption of Regulations for the discussion of nuclear power usage issues with the participation of public organizations, other organizations and citizens” implementing international practices (Aarhus convention, Espoo convention). There were public discussions on nuclear power plant environmental impact assessment. Based on the public discussions the Environmental Impact Assessment report was updated.</p> <p>No facilities for storage of spent fuel are planned to be</p>	

<p>Analysis of sites required for fuel interim storage, and for waste conditioning, storage and, where appropriate, disposal. Evidence that transport between sites has been satisfactorily addressed.</p>	<p>built on the site (contract with Russian Federation). NPP waste processing away-from-reactor facilities will be built by the NPP vendor.</p> <p>Communication infrastructure (railway, road) are under development to connect the site with common networks.</p> <p><u>Condition 12.1: Milestone 2 reached.</u></p> <p><u>Major gaps: None.</u></p>	
EVALUATION Condition 12.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

12.Site and supporting facilities		Phase 2
Condition 12.2: Site ready for construction		
Basis for evaluation	Review observations	
<p>Infrastructure either exists or is planned to support construction, e.g. access, workforce housing, water and construction materials. Any outstanding work is planned to meet construction requirements.</p> <p>Existing and planned site facilities are clearly described in the BIS.</p>	<p>Comprehensive long-term plan for the development of the region of nuclear power plant construction adopted by the Council of Ministers of Belarus No. 1745/2009. Presidential order No.418, 2011 “On siting and design of NPP in Belarus” provide additional supports to the development of infrastructure.</p> <p>Projects on developing infrastructure (highway and railroad construction) have been developed and are implemented. The infrastructure from Ostrovets region should support construction and civil engineering works. A few companies has already been contracted to perform preparatory works (housing, networking, etc.).</p> <p>Information on site facilities has been already shared with vendor organizations and some activities on site are already covered by those organizations. The prepared general contract gives an option to clearly describe responsibilities of parties of the contract and availability of site facilities.</p>	

	<u>Condition 12.2:</u> Milestone 2 reached. <u>Major gaps:</u> None.	
EVALUATION Condition 12.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
SUGGESTIONS		
GOOD PRACTICES		
None		

13.Environmental protection		Phase 1
Condition 13.1: Unique environmental issues recognized		
Basis for evaluation	Review observations	
<ul style="list-style-type: none"> - Identification by the NEPIO of the proposed responsibilities of the regulatory body and environmental agencies on licensing, environmental impact assessments (specific to radiation) and environmental monitoring (both initial background and later operational) around nuclear facilities; - Procedures for the elaboration and reporting of the environmental impact assessments for nuclear and other related facilities, including assessment of their overall and radiological impacts; - Evidence of interactions by specialists with countries operating nuclear power plants; - Evidence that the requirements of the IAEA Safety Standards for the control of radioactive discharges during normal operation are clearly understood by the NEPIO; 	<p>The mission team observed that there is a good understanding on environmental issues and relevant responsibilities have been fully identified.</p> <p>Procedures for the elaboration and reporting of the environmental impact assessments for nuclear facilities are available (Instruction on the procedure of environmental impact assessment of the planned economic and other activity in Belarus) and were used during the EIA process.</p> <p>It was reported to the team that long term cooperation between Belarus and Lithuania on environment issues related mainly to operation of Ignalina NPP facilitated a good understanding and exchange of information in the past.</p> <p>Issues on the control of radioactive discharges are clearly understood and addressed in the EIA report and in the document on Justification of Investments nuclear power station construction in Belarus.</p> <p>Other key issues are recognised and are addressed in the EIA report and in the document on Justification of Investments nuclear power station construction in</p>	

<p>- Evidence that the other key environmental issues: water use, transporting materials, disposal of hazardous waste, additional environmental monitoring requirements, construction impact, etc., are clearly recognized by the NEPIO;</p> <p>- National report on positive environmental outcomes expected from the nuclear power programme;</p> <p>- Communication strategy to stakeholders at different levels, including the general public. (This is also addressed under issue 11, Stakeholder Involvement).</p>	<p>Belarus.</p> <p>The positive environmental outcomes are addressed in the EIA report and in the document on Justification of Investments into nuclear power station construction in Belarus.</p> <p>Established communication strategy tested during the EIA process enables an effective communication with stakeholders.</p> <p><u>Condition 13.1:</u> Milestone 1 reached. <u>Major gaps:</u> None.</p>	
<p>EVALUATION Condition 13.1</p> <p>Actions needed</p>		
SIGNIFICANT	MINOR	NO
		X
<p>RECOMMENDATIONS</p> <p>none</p>		
<p>SUGGESTIONS</p> <p>none</p>		
<p>GOOD PRACTICES</p> <p>none</p>		

<p>13.Environmental protection</p> <p>Condition 13.2: Environmental impact assessment production and communication</p>	<p>Phase 1</p>
<p>Basis for evaluation</p>	<p>Review observations</p>
<p>Identification of the organization charged with the elaboration of the environmental impact assessment report for the selected site and nuclear facility, including the pre-operational environmental monitoring programme;</p> <p>Research programmes to identify the environmental radiological sensitivities;</p> <p>Document on specific safety requirements to be complied with for the siting, design or construction stages to satisfy nuclear law and take account of environmental</p>	<p>The Research and Design Institute BELNIPIENERGOPROM has been assigned to prepare the Environmental Impact Assessment report based on a contract with the DNPPC.</p> <p>On-going research activities are coordinated by the National Academy of Science of Belarus.</p> <p>Based on the self-assessment report and discussion the mission team concluded, that documents prepared on specific safety requirements take into account environmental legislation (e.g. the technical code of the established practice 097-2007 (02120/02300) “Location of nuclear power plants. Guidance to development and contents of justification of environmental</p>

legislation; Communication team established and ready to provide information on environmental issues to the stakeholders and the local population and to organize discussions.	safety of nuclear power plants”). Communication issues are coordinated by the Ministry of Natural Resources and Environmental Protection of Belarus. Public information centre has been set up at the site to facilitate communication on environmental questions. There is an active on-going communication with foreign interested parties. <u>Condition 13.2:</u> Milestone 1 reached. <u>Major Gaps:</u> None.
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EVALUATION Condition 13.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

13.Environmental protection		Phase 1
Condition 13.3: An effective environmental framework for existing uses of radiation sources in place		
Basis for evaluation	Review observations	
Report of an audit/review of the existing framework against international conventions and requirements with a resulting action plan which is being met	The Law on Environmental Protection establishes the framework. In 2008 the AARHUS convention and in 2009 the ESPOO convention were implemented in the national legislation. The team was informed that the national conditions were verified during the EIA process (2009-2011). Experts from Lithuania, Latvia, Austria, Ukraine and Poland participated in the process. <u>Condition 13.3:</u> Milestone 1 reached. <u>Major gaps:</u> None.	
EVALUATION Condition 13.3		
Actions needed		
SIGNIFICANT	MINOR	NO

		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

13. Environmental Protection		Phase 2
Condition 13.1: Environmental studies for selected sites performed		
Basis for evaluation	Review observations	
An Environmental Impact Assessment completed in accordance with National Requirements	In 2011 the Environmental Impact Assessment process has been completed. Condition 13.1: Milestone 2 reached. <u>Major gaps: None.</u>	
EVALUATION Condition 13.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

13.Environmental Protection		Phase 2
Condition 13.2: Particular environmental sensitivities included in BIS		
Basis for evaluation	Review observations	

<p>Information related to site specific environmental issues included in the BIS, including:</p> <ul style="list-style-type: none"> a) pathways for transport of effluent into the environment defined and characterized; b) local population demographics and trends; c) predominant plant and animal life and relevant radio-ecological sensitivities; d) predominant land use; e) data relevant to justifying heat removal capability; f) sites and means for disposal of hazardous waste; g) local environmental issues affecting construction. 	<p>Site specific environmental issues have been identified and will be directly communicated with main designer.</p> <p>Relevant information on issues a) – g) is available in the EIA report and in the document on Justification of investments into nuclear power station construction in Belarus (1588-PZ-OIZ) (e. g. chapters: The population demographics, Assessment of radiological impact on the population of Belarus, Surface water, Biological components of aquatic ecosystems and the processes of formation of water quality, Landscapes, Flora, Fauna, Physical and geographical and climatic characteristics, Soils, Agriculture, Radiation impact assessment on agro ecosystems, etc.)</p> <p>Condition 13.2: Milestone 2 reached. <u>Major gaps: None.</u></p>
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EVALUATION Condition 13.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

13.Environmental Protection		Phase 2
Condition 13.3: Clear and effective regulation of environmental issues established		
Basis for evaluation	Review observations	
<p>Environmental regulatory role clearly established either within nuclear regulator or within existing environment regulator.</p> <p>Adequate skills and resources to assess acceptability of design information and inspect activities during construction.</p> <p>Plan for developing environmental monitoring capability.</p>	<p>The INIR team acknowledges that environmental aspects are regulated by the Ministry of Natural Resources and Environment (MNRE). Technical Codes of Practice were published to give guidance on performing environmental monitoring at the nuclear power plant: TCP "Rules of organization and functioning of the department of environmental protection of the nuclear power plant", TCP "Rules of environmental protection at the nuclear power plants. General provisions", TCP "Rules of environmental monitoring at the nuclear power plant", TCP "Rules of monitoring of meteorological conditions in the region of the nuclear power plants site". Close cooperation between the</p>	

Plan for creating the site baseline information.	<p>MES/GAN and the MNRE is necessary to ensure an efficient and effective regulation on environmental protection at the nuclear power plants.</p> <p>Design information will be assessed by the working group established by key stakeholders (MNRE, ME, MES, and MH). During construction and operation of the facility in the area of monitoring of the nuclear power station, the Department of Hydrometeorology of the MNRE will carry out radiation control and environmental monitoring.</p> <p>Current environmental monitoring capacity is already under modernization. The proposed system of radiation and ecological monitoring of environment in the area of the nuclear power plant will become an integral part of the National Environmental Monitoring in Belarus.</p> <p>Basic environmental information has been included in the EIA report as well as in document on Justification of investments into the nuclear power plant construction in Belarus.</p> <p><u>Condition 13.3: Milestone 2 reached.</u> <u>Major gaps: None.</u></p>
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EVALUATION Condition 13.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

14. Emergency planning		Phase 1
Condition 14.1: Appreciation of the need for emergency planning, developed		
Basis for evaluation	Review observations	
- Clear definition of roles and responsibilities of all organizations to be involved as part of a national emergency preparedness and response	Roles and responsibilities for emergency preparedness and emergency response are defined in the 2008 Law on the Use of Atomic Energy, chapter 7.	

<p>plan.</p> <ul style="list-style-type: none"> - Evidence of interactions with specialists from countries operating nuclear power plants. - Evidence that the requirements of the Early Notification and Assistance Conventions are understood and a plan to implement the requirements is in place. - Recognition of the facilities and equipment that will be required for emergency response. - Plan to develop emergency response capability, identifying any actions which need to be completed during phase 2. The process of developing emergency response capability must be completed by milestone 3. 	<p>The INIR team recognized the clear appreciation for the need for emergency planning by organizations involved in the national emergency preparedness and response needed in relation to the introduction of a nuclear power programme.</p> <p>Within the framework of international cooperation with IAEA and European Commission the Ministry for Emergency Situations received equipment and training.</p> <p>Belarus is party to both the Convention on Early Notification and the Convention on Assistance and has agreements with several States in the region.</p> <p>In accordance with the Resolution of the Council of Ministers, No. 1242, 2010, the Provision about the terms and procedure of development of emergency plans was approved.</p> <p><u>Condition 14.1:</u> Milestone 1 reached. <u>Major Gaps:</u> None.</p>
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EVALUATION Condition 14.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

14. Emergency planning	Phase 1
Condition 14.2: Communication with and involvement of local and national government taken into account	
Basis for evaluation	Review observations

<p>Plans to include national and local authorities in the development of emergency plans;</p> <p>Review of the adequacy of existing facilities used by local and national authorities.</p>	<p>The INIR acknowledged that national and local authorities have been identified to be included in the development of emergency plans.</p> <p>The Ministry for Emergency Situations evaluates compliance of technical means used by the local and national authorities as a part of the frameworks of checks of functioning of subsystems of the State system of prevention and liquidation of emergencies.</p> <p><u>Condition 14.2:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> None.</p>
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EVALUATION Condition 14.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

14. Emergency planning		Phase 1
Condition 14.3: Emergency planning for existing radiation facilities and practices in place		
Basis for evaluation	Review observations	
<p>Report of an audit/review of the existing systems against international requirements such as those in the IAEA Safety Standards Series No.GS-R-2 [11] and GS-G-2.1 [12] with a resulting action plan which is being met. Such a review should be performed through an IAEA Emergency Preparedness Review (EPREV) mission.</p>	<p>In 2010, an IAEA Emergency Preparedness and Response Mission (EPREV mission) was conducted in Belarus. This mission was included in the National plan of actions of Belarus within the frameworks of IAEA TC project RER/9/100.</p> <p>Findings contained in the EPREV report are being addressed for improvement of the emergency preparedness and response system.</p> <p><u>Condition 14.3:</u> Milestone 1 reached</p> <p><u>Major gaps:</u> None</p>	
EVALUATION Condition 14.3		
Actions needed		

SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

14. Emergency Planning		Phase 2
Condition 14.1: Detailed approach to emergency planning being implemented		
Basis for evaluation	Review observations	
<p>Basic regulations developed and communicated to all relevant organizations Clear roles and responsibilities for each organization involved.</p> <p>Clear chain of command for emergency response management established.</p> <p>Identification of the size and type of accident to be covered by the plan (i.e. threat assessments performed). Outline plans prepared and discussed between organizations. Any impediments to sheltering or evacuation have been identified.</p> <p>Procedures have been defined and agreed on or there is a commitment to develop them before operation, covering:</p> <ul style="list-style-type: none"> a) protection of emergency workers b) dissemination of information to the public c) medical response d) immediate and long term environmental protection e) non-radiological consequences <p>Relevant demographic information has been collated and studied by appropriate organizations Plan showing development, approval and testing of emergency plan and procedures</p>	<p>Regulations for addressing emergency planning are contained in:</p> <p>Law of Belarus «Concerning the Protection of the Population and Areas Against Natural and Man-Made Emergencies», 1998;</p> <p>Regulation of the Council of Ministers No. 495 «On state emergency prevention and response system», 2001, amended No.1405, 2005.</p> <p>The Self-evaluation Report identifies several documents that determine roles and responsibilities. In addition, Belarus identified that in the process of developing the off-site emergency plan for the nuclear power plant (in phase 3) roles and responsibilities of each participating organization should be clearly defined.</p> <p>The chain of command is determined by Regulation No. 495 “On state emergency prevention and response system”, 2001, as subsequently amended No.1405, 2005 and Law “Concerning the Protection of the Population and Areas Against Natural and Man-Made Emergencies”, 1998.</p> <p>The INIR team acknowledged that arrangements to coordinate the emergency response of all the off-site response organizations with the on-site response to include a command and control system for the local and national response to any nuclear or radiological emergency at nuclear power plant should be developed in Phase 3.</p> <p>Threat assessments have been performed leading to Category I facility classification.</p> <p>The self-evaluation report identifies several documents related to outlines of emergency plans prepared and discussed between organizations. The INIR team considered these documents from</p>	

<p>completed before the first nuclear fuel arrives on site. Evidence showing plans for relations and communications with neighbouring countries and the IAEA</p>	<p>the perspective of coordination between organizations; The INIR team confirmed the involvement of the respective organizations. The Self-evaluation report identified the action to perform analysis of the adequacy of measures implemented and their compliance with international recommendations should be performed in phase 3. The INIR team acknowledged the action but did not see whether any impediments to sheltering or evacuation have been identified.</p> <p>Regarding the development of procedures, the self-evaluation identified the relevant regulations. The INIR team acknowledge that the procedures should be identified during the development of the emergency plan related to the nuclear power plant.</p> <p>Regarding the analysis of information about the demographic situation, the INIR team acknowledged that some information was included in the environmental impact assessment. However, it is necessary to further analyse the completeness of available information on the demographic statistics in the areas neighbouring to the site for the purposes of emergency planning.</p> <p>Regarding the sub criterion that the operating organization should develop and pass a practical exercise of the internal emergency plan before the first nuclear fuel arrives on-site. The INIR team confirmed that these plans are included in the regulatory requirements.</p> <p>Regarding plans for relations and communications with neighbouring countries and the IAEA, the Self-evaluation report stated that the issue is solved under international treaties of Belarus. The INIR team notes that the international treaties address communications at a national level, but these treaties do not address coordination at the implementation level of preparedness and response. Additionally, the INIR team notes Belarus' past experience of working with neighbouring countries on emergency preparedness and response issues.</p> <p><u>Condition 14.1</u>: Milestone 2 reached. <u>Major gaps</u>: No major gaps, but minor gap identified</p>
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EVALUATION Condition 14.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
None		
SUGGESTIONS		
S-14.1 No. 1 Necessary arrangements should be made to coordinate emergency response plans with neighbouring countries which fall within the precautionary action zone or the urgent protective action planning zone.		
GOOD PRACTICES		

none

14. Emergency Planning

Phase 2

Condition 14.2: Emergency planning for existing radiation facilities and practices in place

Basis for evaluation	Review observations
<p>If an EPREV of existing arrangements has been undertaken, confirmation by IAEA that recommendations of EPREV are implemented and capabilities and arrangements for emergency preparedness and response are in place.</p>	<p>For this condition, the INIR team based its observations on the EPREV Mission to Assess National Capabilities in Belarus conducted on 4 - 8 October 2010 and discussions with Belarus on how they are addressing the mission findings with respect to its existing infrastructure. The INIR team notes that Belarus is currently a country with facilities and practices belonging to threat category III and IV. The EPREV identified the Joint Institute for Power and Nuclear Research Sosny as the most important licensee holder and appointed technical support centre for the future nuclear programme.</p> <p>The EPREV report stated, “The major conclusion made by the EPREV team after gaining insight into the Belarus national emergency preparedness and response (EPR) infrastructure is, that Belarus has established a sound emergency preparedness and response capability, which however its appropriateness and functioning needs a review in view of the plans for constructing NPPs in Belarus.”</p> <p>The INIR team notes through discussions and presentations by Belarus that conclusions and proposals contained in the report according to the results of EPREV mission have been used for improvement of the emergency readiness and response system.</p> <p>One specific mission recommendation was in connection with extended responsibilities of the Ministry of Health in the area of radiation protection and dose assessment (which will only increase in the light of the construction of new NPP) establishing of the Centre of radiation protection under the Ministry of Health is considered. The proposal is now under consideration by the Ministry of Health.</p> <p>Condition 14.2: Milestone 2 reached Major gaps: None</p>
<p>EVALUATION Condition 14.2 Actions needed</p>	

SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None.		
GOOD PRACTICES none		

14.Emergency Planning		Phase 2
Condition 14.3: Actions from earlier reviews completed		
Basis for evaluation	Review observations	
Completion of all actions from any previous audit or review of existing systems against international requirements such as those in GS-R-2 and GS-G-2.1	<p>For this condition, the INIR team based its observations on the EPREV Mission and discussions with Belarus on how they are addressing the mission findings with respect to the introduction of the nuclear power plant.</p> <p>The findings include performing the threat assessment – that has been performed to realize the need for Category I facilities for emergency preparedness and response.</p> <p>Belarus provided an overview of the activities being conducted in relation to the EPREV.</p> <p>The INIR team acknowledges the efforts to address the findings from EPREV Mission.</p> <p><u>Condition 14.3:</u>Milestone 2 reached <u>Major gaps:</u> None.</p>	
EVALUATION Condition 14.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS None		
SUGGESTIONS None		

GOOD PRACTICES

None

15. Security		Phase 1
Condition 15.1: Requirements for security and physical protection acknowledged		
Basis for evaluation	Review observations	
<ul style="list-style-type: none"> - Establishment of a committee for nuclear security-related policy making, interagency coordination and planning activities associated with security and physical protection. Clear definition of its role, structure, responsibilities and reporting requirements. - Evidence of suitable qualifications and experience of the members. - A plan to implement a division/office responsible for the management of security and physical protection arrangements, including an organizational chart and a description of its function. - A plan to hire or contract with SQEP (suitably qualified and experienced personnel) experts and organizations to assist in security and vulnerability analysis as well as risk assessments of malicious acts to nuclear power plants, nuclear and other radioactive material and its transportation. - Government awareness of the risk of malicious acts and possible radiological, political, economic and social consequences. Evidence of intelligence service technical reports on the analysis of incidents occurring at nuclear facilities in the world. - Government awareness of international guidelines on security. - Plan to train relevant staff including police and armed forces. - Programme to develop strong security culture during phase 2. 	<p>A dedicated Committee has not been yet established, but the nuclear security issues are discussed by the Interdepartmental Commission on Co-ordination and Control of NPP Construction.</p> <p>The team has been informed that a division responsible for physical protection issues within the MES/GAN is going to be established and the number of physical protection staff will be increased. The relevant organizational structure in the DNPPC already exists.</p> <p>The team has been informed that a suitably qualified and experienced TSO's exist in Belarus, which will be potential contractors in the security field including security analysis, vulnerability analysis and risk assessments of malicious acts.</p> <p>The Government is aware about the risk of malicious acts and possible radiological and other consequences. A system for distributing information exists in order to make available the intelligence service technical reports and analyses to the relevant organizations. The team has been informed that a plan exists to harmonize the national regulations and guides with the IAEA Nuclear Security Series.</p> <p>The existing training system within the Ministry of Internal Affairs includes a specialized training on nuclear security related issues. Training of the MES/GAN and operator's staff is carried out through courses and workshops organized by the IAEA, as well as within the framework of bilateral cooperation.</p> <p>A programme for development of strong security culture has not been yet developed. The team has been informed that the Government is aware about this issues and such programme will be developed taking into account of the IAEA Nuclear Security Series, No.7, 2008.</p> <p><u>Condition 15.1:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> No major gaps, but minor gap identified.</p>	

EVALUATION Condition 15.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-15.1 No. 1 The Government should fulfil its commitment to establish a programme to develop strong security culture.		
GOOD PRACTICES		
none		

15.Security		Phase 1
Condition 15.2: Necessary regulation identified		
Basis for evaluation	Review observations	
<ul style="list-style-type: none"> - Plan to develop national legislation providing a basis for regulation of security and physical protection arrangements regarding nuclear facilities, nuclear and other radioactive material, its transportation and storage, including provisions for licensing, inspection, and sanctions. - Plan to develop a regulatory function in the area of security and physical protection, including physical protection requirements, information confidentiality, security staff recruitment, security culture and other components. - A set of requirements such as those in IAEA Nuclear Security Series. - A plan, including allocation of adequate resources, for the production of regulatory documents. - Clear identification of a head organization that will manage a national DBT (design basis threat) development. - A plan to collect documents, information, data from investigations and other source data on illegal, malicious, criminal and other acts, in order to carry out a risk assessment and modelling scenarios of illegal activities. - Evidence that external and other threats have 	<p>The plans to develop national legislation and regulations in the field of nuclear security are described in the “<i>Action Plan of Governmental Bodies for Implementation of the Law of the Republic of Belarus “On the Use of Atomic Energy”</i>”, and in the <i>State Programme “Scientific Support of Development of Nuclear Power Sector in the Republic of Belarus for 2009-2010 and up to 2020”</i>. The team has been informed that several documents related to nuclear security are already developed and are at the stage of approval.</p> <p>The Government has approved a plan assigning the required resources for preparation of regulatory documents related to the construction of the new NPP. Joint Institute for Power and Nuclear Research “Sosny” develops a number of documents with financing from the innovation fund of the Ministry of Energy.</p> <p>The responsibility, duties, methods for identification of threats to nuclear facilities, and procedures for DBT development, are described in different documents approved by the Government and by the Ministry of Internal Affairs. The head organization for a national DBT is National Security Council and for the facility DBT – the Operator.</p> <p>A draft national DBT is under preparation by the MI, KGB, MES, and National Academy of Sciences.</p>	

<p>been considered for the selected nuclear power plant sites in order to minimize the risk of malicious acts.</p>	<p>The facility DBT should be developed by a working group which is established by the operator of the nuclear facility and includes representatives of MES, ME, MI, the State Border Guard Committee, local authorities, and KGB.</p> <p>The INIR team found that the external security threats were considered in very limited scope during the NPP site selection process. Nevertheless, given the status of the Belarus planning in the area of security, the INIR mission team concluded that Milestone 1 had been reached. However, it was noted that the site related security threats should be further studied in Phase 2.</p> <p><u>Condition 15.2:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> None.</p>	
<p>EVALUATION Condition 15.2</p>		
<p>Actions needed</p>		
SIGNIFICANT	MINOR	NO
		X
<p>RECOMMENDATIONS</p> <p>none</p>		
<p>SUGGESTIONS</p> <p>None</p>		
<p>GOOD PRACTICES</p> <p>none</p>		

15. Security	Phase 1
Condition 15.3: Effective security protection for existing uses of radiation sources in place	
Basis for evaluation	Review observations
<p>Report of an audit/review of the existing protection against international requirements with a resulting action plan which is being met.</p>	<p>IAEA IPPAS missions were held in 2000 and 2009. It was reported to the INIR mission team that the recommendations of these missions were fully implemented. A set of documents is available, which regulates the issues of physical protection of nuclear materials and nuclear facilities at the site of Joint Institute of Power and Nuclear Research "Sosny".</p> <p><u>Condition 15.3:</u> Milestone 1 reached.</p> <p><u>Major Gaps:</u> None.</p>

EVALUATION Condition 15.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

15. Security	Phase 2
Condition 15.1: Legislation promulgated	
Basis for evaluation	Review observations
<p>Arrangements and draft of agreements covering protocols and programmes for local and national law enforcement assistance.</p>	<p>The plans to develop national legislation and regulations in the field of nuclear security are described in the <i>Action plan of governmental bodies for implementation of the Law of the Republic of Belarus “On the Use of Atomic Energy”</i>, and in the <i>State Programme “Scientific Support of Development of Nuclear Power Sector in the Republic of Belarus for 2009-2010 and up to 2020”</i>. The state programme stipulates for development of technical normative legal acts regulating the conditions of physical protection of nuclear facilities.</p> <p>The team has been informed that several documents related to nuclear security are already developed and are either promulgated or at the stage of approval including: The state programme “Scientific support of development of nuclear power sector in Belarus for 2009-2010 and up to 2020” approved by the Resolution of the Council of Ministers of Belarus No.1116, dated August 28, 2009. The state programme stipulates the development of technical normative legal acts regulating the conditions of physical protection of nuclear facilities.</p> <p><u>Condition 15.1:</u> Milestone 2 reached.</p> <p><u>Major Gaps:</u> No major gaps, but minor gap identified.</p>

EVALUATION Condition 15.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-15.1 No. 1 The development and enforcement of the planned legislative and regulatory documents should be finalized.		
GOOD PRACTICES		
none		

15.Security	Phase 2
Condition 15.2: DBT defined	
Basis for evaluation	Review observations
The design basis threat defined and outline of security requirements included in the BIS.	<p>The responsibility, duties, methods for identification of threats to nuclear facilities, and procedures for DBT development, are described in different documents approved by the Government and by the Ministry of Internal Affairs. The head organization for the national DBT is the National Security Council and for the facility DBT – the Operator.</p> <p>A draft national DBT is under preparation by the MI, KGB, MES.</p> <p>The facility DBT should be developed by a working group to be established by the operator of the nuclear facility and includes representatives of MES, ME, the State Border Guard Committee and KGB.</p> <p>The DBT working group for the nuclear power plant has not yet been established. This gap has been identified by the counterparts and has been reported in the self-evaluation report. The INIR team has been informed that</p>

	<p>the DBT working group for NPP will be established in the 4th quarter of 2012.</p> <p><u>Condition 15.2:</u> Milestone 2 not reached.</p> <p><u>Major Gaps:</u> Major gap identified</p> <p>Facility DBT for NPP not defined.</p>	
EVALUATION Condition 15.2		
Actions needed		
SIGNIFICANT	MINOR	NO
X		
RECOMMENDATIONS		
R-15.2 No. 1 The facility Design Basis Threat (DBT) for the NPP should be defined.		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

15. Security Condition 15.3: Security requirements defined	Phase 2
Basis for evaluation	Review observations
<p>Security requirements and desirable features planned for the site. Evidence that best practise for security at the nuclear power plant is understood.</p>	<p>The INIR team has been informed that security requirements and planned desirable characteristics for the site have not yet been defined, but a <i>Terms of Reference on NPP Physical Protection Design</i> is under development. The team recognizes that this delay could be related to fact that the facility DBT is not yet defined (see the observations in 15.2 above).</p> <p>In relation with the above observation the counterparts informed the team that during the bidding process the vendor's security requirements in combination with national requirements for strategic facilities would be applied. The national technical requirements are described in the internal</p>

	<p>document of the Ministry of Internal Affairs named “<i>Instruction about the Engineering and Technical Means of Physical Protection of Facilities Guarded by Internal Troops</i>”.</p> <p><u>Condition 15.3:</u> Milestone 2 reached.</p> <p><u>Major Gaps:</u> No major gaps, but minor gap identified.</p>	
EVALUATION Condition 15.3		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-15.3 No. 1 The <i>Terms of Reference on NPP Physical Protection Design</i> should be finalized in accordance with the DBT.		
GOOD PRACTICES		
none		

15. Security	Phase 2	
Condition 15.4: Sensitive information defined		
Basis for Evaluation	Review Observations	
<p>Procedures for the definition and protection of sensitive information. Penalties for violation available and supported by legislation.</p>	<p>The main rules for working with classified information are defined in the Law On the State Secrets. The Ministry of Energy has developed a draft list of information constituting state secrets. Penalties for violation of the classified information rules are described in the Criminal Code and in the Code on administrative violation.</p> <p><u>Condition 15.4:</u> Milestone 2 reached.</p> <p><u>Gaps:</u> None.</p>	
EVALUATION Condition 15.4		

Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
SUGGESTIONS none		
GOOD PRACTICES none		

15. Security Condition 15.5: Physical protection by trained on-site security staff provided	Phase 2	
Basis for evaluation	Review observations	
Security requirements during construction defined, including on site civil security personnel and a policy on whether armed, and a plan for their implementation.	<p>The INIR team has been informed that the security requirements during construction are defined in the current legislation. The physical protection of the new NPP will be performed by the operating organization until receipt of the fresh fuel on site. The operating organization holds a license to operate its own armed security service. After fresh fuel receipt, the physical protection will be performed by internal military forces of the Ministry of Internal Affairs.</p> <p><u>Condition 15.5:</u> Milestone 2 reached <u>Major gaps:</u> None.</p>	
EVALUATION Condition 15.5		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
SUGGESTIONS none		
GOOD PRACTICES none		

15.Security Condition 15.6. Programmes for selection/qualifications of staff with access to facilities are in place	Phase 2	
Basis for evaluation	Review observations	
Adequate screening programmes for recruitment and selection of personnel with access to facilities and classified documentation.	<p>According to the Law On the State Secrets any person having access to classified information should be checked for trustworthiness.</p> <p>The INIR team has been informed that similar screening procedure will be applied to any person having access to the future NPP. This screening is based on the national regulations about providing access to strategic facilities.</p> <p><u>Condition 15.6:</u> Milestone 2 reached.</p> <p><u>Major gaps:</u> None.</p>	
EVALUATION Condition 15.6		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
SUGGESTIONS none		
GOOD PRACTICES none		

15.Security Condition 15.7. Security culture promulgated	Phase 2	
Basis for evaluation	Review observations	
Evidence of the promulgation of a security culture, recognizing the importance of nuclear material, within all key organizations involved in the nuclear power programme	<p>The INIR team has been informed that the experts of authorized governmental bodies and organizations participate in seminars and meetings organized by the IAEA and the EU, and in national and international</p>	

	<p>conferences.</p> <p>The "Sosny" institute in cooperation with the U.S. Department of Energy held a workshop "On programme development for nuclear security culture". A work plan on nuclear security culture in "Sosny" institute has been developed.</p> <p>A programme for development of strong security culture for Phase 2 has not been yet developed.</p> <p>The team has been informed that the Government is aware about this issues and such programme will be developed taking into account of the IAEA Nuclear Security Series, No.7, 2008.</p> <p>While the INIR team recognizes the work done in "Sosny" institute in the field of security culture, the conclusion is that these activities are limited only to the Institute and not affect the other organizations involved in the project for construction of new NPP.</p> <p><u>Condition 15.7:</u> Milestone 2 not reached.</p> <p><u>Major gaps:</u> Major gap identified:</p> <p>A programme for development of strong security culture for Phase 2 has not been yet developed. The security culture has not been promoted in all key organizations involved in the nuclear power programme.</p>
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EVALUATION Condition 15.7		
Actions needed		
SIGNIFICANT	MINOR	NO
X		
RECOMMENDATIONS		
R-15.7 No. 1 A programme for development of strong security culture should be developed and implemented in all key organizations.		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

16. Nuclear fuel cycle Condition 16.1: Knowledge of nuclear fuel cycle steps and approaches Developed	Phase 1
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Basis for evaluation	Review observations	
<p>- A document clearly demonstrating that the NEPIO understands the long term nuclear fuel cycle commitments inherent in developing a nuclear power programme and has gathered the requisite knowledge for completing realistic nuclear fuel cycle plans during phase 2. The document should also identify available national natural resources and capacities for the fuel cycle and provide an assessment of available policy options for a national fuel cycle strategy and address non-proliferation issues.</p> <p>- A document clearly demonstrating that the NEPIO understands the possible regulatory requirements of fuel cycle facilities.</p>	<p>The INIR team has been informed about a contract according to which the Russian Federation will supply ready-to-use fuel assemblies and control rods for the whole reactor lifetime. In the initial batch the first two loads will be delivered. Belarus does not intend to develop any national enrichment or fuel fabrication capacities.</p> <p>Regarding the back-end of the fuel cycle, based on Agreement between Russian and Belarusian governments of 8 October 2010, spent nuclear fuel will be transported to Russian Federation for long term storage and consequent reprocessing; waste generated during reprocessing will stay on the territory of Russian Federation. However, Belarus Academy of Science studies alternative options for managing spent nuclear fuel.</p> <p>Regulatory capacities are sufficient and experienced enough to supervise development, operation and decommissioning of fuel cycle facilities, as well as fresh and spent fuel transport.</p> <p>Even if some policy elements are in place in Belarus, not having a national policy statement for spent fuel management endorsed at the governmental level may complicate implementation of the long term fuel cycle planning (see suggestion 16.1 in Phase 2).</p> <p><u>Condition 16.1:</u> Milestone 1 reached. <u>Major Gaps:</u> None.</p>	
<p>EVALUATION Condition 16.1 Actions needed</p>		
SIGNIFICANT	MINOR	NO
		X
<p>RECOMMENDATIONS none</p>		
<p>SUGGESTIONS</p>		
<p>GOOD PRACTICES GP-16.1 No. 1 In spite of agreed fuel take-back by the vendor, Belarus institutions have been studying alternative options of managing spent fuel. This increases country's capability to overcome risk of termination of the current contract and flexibility to select economically optimal approach.</p>		

16. Nuclear fuel cycle	Phase 1
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Condition 16.2: Need for site spent fuel storage recognized		
Basis for evaluation	Review observations	
A document clearly showing that the NEPIO has understood the importance of adequate capacity for on-site spent fuel storage, taking into account different fuel cycle options (i.e. open and closed fuel cycles).	<p>The INIR team found that at-reactor spent fuel storage facility will be built within the contract on NPP construction. Its capacity for 10 year of a reactor operation is considered to be sufficient to avoid construction of an away-from reactor store, as the spent fuel might be transported after at least 3 years cooling to Russian Federation.</p> <p>The INIR team was informed that Belarus acknowledges the need to address this issue with sufficient lead time to expand their spent fuel storage capacity.</p> <p><u>Condition 16.2:</u> Milestone 1 reached. <u>Major Gaps:</u> None.</p>	
EVALUATION Condition 16.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

16. Nuclear fuel cycle		Phase 1
Condition 16.3: Interim spent fuel storage considered		
Basis for evaluation	Review observations	
A document clearly indicating that the NEPIO is aware of the need to consider available options for longer term storage of spent fuel.	<p>The INIR team understands that as the spent fuel will be after at least 3 years cooling transported to Russian Federation, away from reactor storage facility will not be built.</p> <p><u>Condition 16.3:</u> Milestone 1 reached. <u>Major Gaps:</u> None.</p>	

EVALUATION Condition 16.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

16. Nuclear Fuel Cycle		Phase 2
Condition 16.1: Fuel cycle strategy decided		
Basis for evaluation	Review observations	
<p>A completed nuclear fuel cycle planning document applying the NEPIO knowledge of the steps and approaches, defining a realistic nuclear fuel cycle strategy at a level of detail appropriate for milestone 2. Evidence that basic decisions needed for milestone 2 have been made for both front and back ends of the nuclear fuel cycle. These include a decision on the number of reloads to be requested with the first core and a short and long term purchasing strategy for the fuel services (natural uranium, conversion, enrichment, fuel manufacturing, fuel take back), on-site spent fuel storage capacity and a strategy for purchasing/building this capacity (e.g. capacity of reactor pools). An integrated plan for bidding and construction of fuel cycle facilities consistent with the power plant construction programme and the national non-proliferation commitment.</p>	<p>The INIR team learned that guarantee for life-time fuel supply and spent fuel take-back has been provided by the Russian vendor and Government, respectively. Timing of taking back spent nuclear fuel (SNF) needs to be planned so that to ensure that available at-reactor store capacity is sufficient in any time.</p> <p>A Strategy for SNF management has been drafted, considering several management options: take-back, away-from-reactor storage, reprocessing with waste return, but has not yet been endorsed by the government.</p> <p><u>Condition 16.1: Milestone 2 reached.</u> <u>Major gaps:</u> No major gaps, but minor gap identified.</p>	
EVALUATION Condition 16.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-16.1 No. 1 Belarus should consider reviewing the existing legal framework in terms of policy for		

spent fuel management and incorporate the missing elements in the Strategy for the management of spent fuel, which should be endorsed by the Belarusian government
GOOD PRACTICES
none

17. Radioactive waste		Phase 1
Condition 17.1: The burdens of radioactive waste from nuclear power plants recognized		
Basis for evaluation	Review observations	
A document clearly demonstrating that the NEPIO understands the significant implications and responsibilities related to high, intermediate and low level radioactive waste resulting from nuclear power generation. The document should address realistic understanding of needed national capabilities, regulatory framework, financing schemes, radioactive waste management infrastructure, radioactive waste arising and options for relevant processing, handling, storage, and disposal technologies and facilities.	<p>The INIR team found that Belarus addresses most of the key issues related to radioactive waste management, including waste disposal. Even if some policy elements are in place in Belarus, not having a national policy statement endorsed at the governmental level may complicate planning and implementation of the long term strategy for radioactive waste management.</p> <p>Condition 17.1: Milestone 1 reached.</p> <p><u>Major gaps</u>: No major gaps, but minor gaps identified.</p>	
EVALUATION Condition 17.1		
Actions needed		
SIGNIFICANT	MINOR	NO
	X	
RECOMMENDATIONS		
none		
SUGGESTIONS		
S-17.1 No. 1 Belarus should consider reviewing the existing legal framework in terms of policy for radioactive waste management and, when appropriate, incorporate the missing elements in the Strategy for radioactive waste management		
GOOD PRACTICES		
none		

17. Radioactive waste		Phase 1
Condition 17.2: Current capabilities for waste processing, storage and disposal reviewed		
Basis for evaluation	Review observations	
A document clearly showing that the NEPIO has examined current capabilities for processing, storage and disposal of intermediate and low level radioactive waste and understands the options for addressing any shortfalls.	The INIR team appreciated the draft radioactive waste management strategy document which analyses current capacities, capabilities, and practices and proposes how to coordinate current institutional waste and anticipated NPP waste management systems. <u>Condition 17.2:</u> Milestone 1 reached. <u>Gaps:</u> None.	
EVALUATION Condition 17.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
GP-17.2 No. 1 The INIR team considers developing a national strategy dealing with management of radioactive waste from all national sources as beneficial: it simplifies the relevant infrastructure, optimise the need for facilities, and economise the whole waste management system.		

17. Radioactive waste		Phase 1
Condition 17.3: Options for ultimate disposal of high level radioactive waste recognized		
Basis for evaluation	Review observations	

<p>A document clearly indicating that the NEPIO understands options for final disposal of high level radioactive waste.</p>	<p>The INIR team was informed that based on Agreement between Russian and Belarusian governments, spent nuclear fuel will be transported to Russian Federation for long term storage and consequent reprocessing; waste generated during reprocessing will stay on the territory of Russian Federation.</p> <p>However, waste that must be disposed of underground will be generated during NPP operation and decommissioning. The team was informed that the Belarus Academy of Science is performing studies related to geological disposal of radioactive waste.</p> <p><u>Condition 17.3:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> None</p>	
<p>EVALUATION Condition 17.3 Actions needed</p>		
<p>SIGNIFICANT</p>	<p>MINOR</p>	<p>NO</p>
		<p>X</p>
<p>RECOMMENDATIONS none</p>		
<p>SUGGESTIONS S-17.3 No. 1 The studies performed might consider co-disposal of intermediate and high level waste in a single facility at the national level.</p>		
<p>GOOD PRACTICES none</p>		

<p>17. Radioactive Waste Condition 17.1: Handling the burdens of radioactive waste considered</p>		<p>Phase 2</p>
<p>Basis for evaluation</p>	<p>Review observations</p>	
<p>A defined national waste management organization. A strategy document prepared by the waste management organization to implement the national policy for the management of all kinds of radioactive waste, considering regulatory and implementation infrastructures, allocation of responsibilities, technical approaches and capabilities, financing schemes, etc. Regulatory capabilities established able to</p>	<p>The INIR team was informed that the draft RWM strategy has been developed and covers processing, storage and disposal of NPP and institutional radioactive waste and proposes a new entity to build and operate disposal facilities. However, the strategy has not dealt with waste requiring subsurface disposal (ILW in IAEA categorisation). Furthermore, the following gaps were identified:</p> <ul style="list-style-type: none"> The operator is requested to create a decommissioning fund ensuring also financing management of radioactive waste generated at its facility. As the financial means will 	

<p>license, regulate, assess, control and enforce safety requirements for radioactive waste management including further disposal options.</p> <p>A completed radioactive waste planning document applying the NEPIO understanding of the significant implications of radioactive waste at a level of detail appropriate for milestone 2 (e.g. volumes and isotopic content of waste have been estimated).</p> <p>An integrated plan for bidding and construction of waste facilities consistent with the power plant construction programme.</p>	<p>be needed also after facility decommissioning a system providing long term availability of financial resources shall be established. (see issue 4);</p> <ul style="list-style-type: none"> Radioactive waste classification system in Belarus is determined in three different documents: in spite of this, the INIR team regards its eligibility for waste disposal purposes as limited. <p>Supplier of nuclear power plants planned to build nuclear waste storage facility as part of the project of the Belarusian nuclear power plant. The facility provides storage of high-, intermediate-and low-level radioactive waste.</p> <p>The team was informed that the capacities and capabilities of the regulatory body are sufficient to supervise RWM programme.</p> <p><u>Condition 17.1:</u> Milestone 2 has not been reached. <u>Major Gaps:</u> Major gap identified:</p> <p>A radioactive waste management strategy has not been approved and endorsed by the Government;</p>
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EVALUATION Condition 17.1		
Actions needed		
SIGNIFICANT	MINOR	NO
X		
RECOMMENDATIONS		
R-17.1 No. 1 The government of Belarus should endorse the Strategy of radioactive waste management.		
SUGGESTIONS		
S-17.1 No. 1 While updating the draft Strategy for radioactive waste management, creating a waste tracking system is proposed to be included.		
S-17.1 No. 2 Radioactive waste classification system in Belarus should be harmonised with the IAEA's current system to involve disposal aspects and to enhance application of the IAEA recommendations in Belarus.		
GOOD PRACTICES		
none		

<p>17. Radioactive Waste</p> <p>Condition 17.2: Implementation plan for ultimate high level waste disposal in preparation</p>	<p>Phase 2</p>
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Basis for evaluation		Review observations	
<p>A planning document completed based on the established national policy/strategy and recognizing options for the management and final disposal of high level radioactive waste. Responsibility assigned for monitoring international efforts and progress on high level waste disposal.</p>		<p>The INIR team was informed that SNF will be sent back to Russian Federation without return of waste to be generated during its planned reprocessing.</p> <p>The team was also informed that desk studies regarding geological disposal are performed by the Belarusian Academy of Science.</p> <p>The NPP project provides for the Belarusian nuclear power processing and storage of radioactive waste produced during operation and decommissioning. All wastes shall be conditioned and packaged in special containers. Radioactive waste can be stored at the plant during the whole period of operation, but the draft National Strategy considers an opportunity to transfer to a national repository.</p> <p><u>Condition 17.2:</u> Milestone 2 reached.</p> <p><u>Major gaps:</u> No major gaps, but minor gap identified</p>	
EVALUATION Condition 17.2			
Actions needed			
SIGNIFICANT	MINOR	NO	
	X		
RECOMMENDATIONS			
none			
SUGGESTIONS			
S-17.2 No. 1 To consider approaches for long term management of waste which require disposal in subsurface facilities and incorporate them in the Strategy for radioactive waste management.			
GOOD PRACTICES			
none			

18. Industrial Involvement		Phase 1
Condition 18.1: National policy with respect to national and local industrial involvement considered		
Basis for evaluation	Review observations	
A policy for national industrial involvement	The INIR team has been informed about the scope of	

<p>based on the following:</p> <p>(a) A survey of industries with the potential to participate in the nuclear power programme for construction or support services for nuclear safety related activities and analyses their ability to satisfy the requirements of a nuclear power programme.</p> <p>(b) A survey of local suppliers with the potential to supply equipment or services supporting nuclear power plant construction, maintenance and/or operation including:</p> <p>(i) Equipment for workshops and labs;</p> <p>(ii) Local and national origin consumables;</p> <p>(iii) Spare parts.</p> <p>(c) Meetings held with potential suppliers to explain standards and qualifications required and review the feasibility of involvement.</p> <p>A summary of industries capable of participating in non-nuclear safety related construction or support services activities with any required actions and funding requirements.</p>	<p>following plans and measures taken:</p> <p>A thorough analysis was conducted of possible use of production, construction, raw material, scientific base and staffing potential of Belarus during NPP construction.</p> <p>An approximate requirement of material, technical and human resources needed for NPP construction has been done.</p> <p>Conceptual proposals by “BelNIIPgradostroitelstva” for development of Ostrovets settlement during construction period and NPP operation have been done as well as proposals about social and economic development, creation of the required production and social infrastructure in Ostrovets.</p> <p>A summary report on development of existing and establishment of new production units and social and residential infrastructure required for construction of the NPP has been prepared taking into account the perspective of Ostrovets development</p> <p>Data on the required staff for NPP construction and operation during the coming years has been reassessed. The maximum number of workers at site has been estimated at 8500 people.</p> <p>The complex perspective plan of development of the region of nuclear power plant construction, approved by the Council of Ministers of Belarus No. 1745 (confidential), dated December 31, 2009 – industrial participation in establishment of the production base for NPP construction and in development of the required infrastructure: transport, communication, electricity transmission lines, housing, new production premises, social projects.</p> <p>The INIR team understood that the development of regional infrastructure is in good progress.</p> <p><u>Condition 18.1: Milestone 1 reached.</u> <u>Major Gaps: None.</u></p>
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EVALUATION Condition 18.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		

GOOD PRACTICES

none

18. Industrial Involvement		Phase 1
Condition 18.2: Need for strict application of quality programmes for nuclear equipment and services recognized		
Basis for evaluation	Review observations	
If the national policy supports industrial involvement in construction or support services, a policy and plan for development of an appropriate management system (including quality control and quality assurance), along with evidence of the availability of the appropriate investment requirements.	<p>At the national policy level the industrial involvement in construction or support services is implemented in tasks which are not related to nuclear safety class 1 and 2 systems.</p> <p>Quality assurance and quality control have been taken into account.</p> <p>The plan of development of the region of nuclear power plant construction was approved by the Council of Ministers of Belarus No. 1745 ,– “<i>Industrial participation in establishment of the production base for NPP construction and in development of the required infrastructure: transport, communication, electricity transmission lines, housing, new production premises, social projects.</i>” dated December 31, 2009.</p> <p><u>Condition 18.2:</u> Milestone 1 reached. <u>Major Gaps:</u> None.</p>	
EVALUATION Condition 18.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

18. Industrial Involvement**Condition 18.1: Realistic assessment of the national and local capabilities carried out****Phase 2**

Basis for evaluation	Review observations	
<p>A realistic assessment of the national and local supplier capabilities for either nuclear or non-nuclear safety related activities based on the national policy recommended by the NEPIO. Extent of national industrial participation agreed and established and desired targets for local and national industrial involvement included in the BIS.</p>	<p>The comprehensive long-term plan of development of the nuclear power plant construction region was developed, which was approved by the Council of Ministers of Belarus of 31.12.2009 No. 1745 (Confidential). Implementation of the plan is in progress.</p> <p>The Agreement between the Government of Belarus and the Russian Federation “On cooperation in nuclear power plant construction in the territory of Belarus” of March 15, 2011 specifies the maximum possible involvement of Belarusian executive organizations in the nuclear power plant construction and installation works, scientific and supply support (Article 3 and Article 7 of the Agreement).</p> <p>The State programme of personnel training for nuclear power plant is implemented.</p> <p>The transport infrastructure in the region of NPP construction is developed</p> <p>Construction of the NPP production facilities and plant site has been started.</p> <p>The residential building (at present 60 apartments) for NPP builders has been constructed.</p> <p>The INIR team understood that the assessment is realistic and work according to the plan should be carried through.</p> <p><u>Condition 18.1:</u> Milestone 2 reached. <u>Major Gaps:</u> None.</p>	
EVALUATION Condition 18.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS none		
SUGGESTIONS none		
GOOD PRACTICES none		
18. Industrial Involvement Condition 18.2: Ability to meet schedule and quality requirements		Phase 2

analysed		
Basis for evaluation	Review observations	
Requirements for industries to be added to the approved vendor/service supplier list together with procedures for audits of the management systems (including quality control and assurance) of the approved vendor/supplier.	<p>Application forms of foreign supplier of Joint Stock Company "Atomstroieexport" (containing sections: general information, activity information, production and technical capabilities of organization, quality management, corporate culture) were filled in by Belarusian organizations which may be potential suppliers for the project of NPP construction in Belarus. These enterprises have a quality management system in accordance with ISO 9001, 14001, OHSAS18001</p> <p>The companies applying for acceptance by Atomstroieexport have to demonstrate that they fulfil Quality requirements set up by the main supplier which includes the presence of a certified QA system. Most of them have already a "license" to deliver materials or services to Russian NPP's. At present more than 1000 experts, mainly in civil construction works are working on Russian NPP construction sites.</p> <p>Training courses to train applicants in QA requirements are in place.</p> <p><u>Condition 18.2:</u> Milestone 2 reached.</p> <p><u>Major Gaps:</u> None.</p>	
EVALUATION Condition 18.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

18. Industrial Involvement		Phase 2
Condition 18.3: Plans and programmes to transition to national and local suppliers in place		
Basis for evaluation	Review observations	

<p>If the national policy for industrial involvement supports the involvement of industrial involvement in construction or support services, clear plans and programmes identifying:</p> <p>a) specific industrial involvement in future construction, maintenance or operational support services</p> <p>b) audits of the progress of industrial preparation and ability to meet the requirements for addition to the approved supplier</p> <p>c) short term and long term programme (including future projects) to develop the ability to produce items initially being supplied by foreign suppliers</p> <p>d) consideration of mechanisms to be agreed with the awarded main supplier to convert national items into foreign supplied items and vice versa, in case of supply problems having major impact on the construction schedule.</p>	<p>A summary report on the analysis of capabilities of the industrial, construction, resource and knowledge base of Belarus in the construction of NPP covers this area.</p> <p>The INIR team was informed that the national enterprises are focusing solely on non-safety and general materials and services e.g. transformers, general electrical and mechanical equipment, great portion of civil engineering and for the time being no actions or plans had been taken to participate in safety class 1 and 2 equipment manufacturing in the near future. safety class 1 and 2 components are usually delivered only by manufacturers who have long lasting and proven experience with VVER components and whether capabilities can be developed during the construction of first units in Belarus will be a subject of experience feedback in the upcoming years.</p> <p><u>Condition 18.3:</u> Milestone 2 reached.</p> <p><u>Major gaps:</u> None.</p>
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EVALUATION Condition 18.3		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

<p>19. Procurement</p> <p>Condition 19.1: Unique requirements associated with purchasing nuclear equipment and services recognized</p>	<p>Phase 1</p>
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Basis for evaluation	Review observations	
<p>Clear recognition of the issues related to procurement covering local, national and foreign supplies, and a plan to develop the following aspects during phase 2:</p> <p>(a) Specialized procurement team</p> <p>(b) Filing of: design descriptions, technical specifications, drawings of items to be procured.</p> <p>(c) Quality levels to be assigned, depending on the relevance of the item.</p> <p>(d) Standards and codes ruling the item.</p> <p>(e) Environmental qualification of the item (including storage conditions on the shelf, expiry dates, etc.)</p> <p>(f) Stock policy to be adopted. (max./min levels).</p> <p>(g) Urgent procurement procedures.</p> <p>A recruitment and training programme to build up the procurement team. The programme should cover the following activities:</p> <p>(a) Bid requesting and bid evaluation;</p> <p>(b) Awarding, issuing of purchase orders;</p> <p>(c) Letter of credit;</p> <p>(d) Quality programmes. Inspection, hold points and stopping work during manufacturing;</p> <p>(e) Manufacturing schedule and delivery time;</p> <p>(f) Testing and reception;</p> <p>(g) Transportation and insurance;</p> <p>(h) Taxes;</p> <p>(i) Customs clearing.</p>	<p>The Department of equipment provision of the Capital Construction Department is established and the functions of the department have been defined.</p> <p>Belarus recognized the need for a document and records management system to ensure the appropriate keeping of all documents.</p> <p>The Department of equipment provision is established and the functions of the department have been defined.</p> <p>The INIR team has been informed about procurement arrangements. Because the Russian Federation undertakes to construct a nuclear power plant "turn-key" including all equipment supply, the role of procurement department is limited.</p> <p><u>Condition 19.1:</u> Milestone 1 reached.</p> <p><u>Gaps:</u> None.</p>	
EVALUATION Condition 19.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

19. Procurement		Phase 1
Condition 19.2: Consistent policies for nuclear procurement in place		
Basis for evaluation	Review observations	
If the national policy for industrial involvement supports the involvement of industrial involvement in construction or support services, a policy and plan for development of an appropriate management system (including quality control and quality assurance), along with the evidence of the availability of appropriate investment requirements.	<p>The complex perspective plan of development of nuclear power plant construction was approved by the Order of the Council of Ministers of Belarus No. 1745 (confidential), dated December 31, 2009.</p> <p>According to national plan and the intergovernmental agreement between Russian and Belarus Government a share of about 30% national industrial support is foreseen. Scope and conditions had been discussed under issue 18 (industrial involvement).</p> <p>At present the related procurement capabilities will be developed in the framework of the “turn-key contract” with Atomstroyexport. The contract is under final negotiations.</p> <p>The issue of an appropriate management system is discussed with condition 3.6.</p> <p><u>Condition 19.2:</u> Milestone 1 reached.</p> <p><u>Major gaps:</u> None</p>	
EVALUATION Condition 19.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

19. Procurement		Phase 2
Condition 19.1: Owner/operator competence to carry out nuclear procurement evident		
Basis for evaluation	Review observations	

<p>Evidence of a suitably qualified and experienced procurement team with competence in:</p> <ul style="list-style-type: none"> a. bid requesting and bid evaluation b. awarding, issue of purchase orders c. letter of credit d. quality programmes e. surveillance and follow up of items under manufacturing f. inspection, hold points and stopping work during manufacturing g. corrective actions to be taken when quality or schedule requirements are under risk h. manufacturing schedule and delivery time i. testing and reception j. non-conformance report and acceptance procedure established (accepted as is, refurbishment necessary, rejected) k. transportation and insurance l. taxes m. Customs clearing <p>Evidence of an informed decision about need for procurement office close to main supplier. Plans to participate in appropriate 'owners group'.</p>	<p>The "Department of facility Procurement & Logistics of Capital Construction administration (UKS)" was created in the DNPPC and the functions of the department determined.</p> <p>The Russian Federation undertakes to construct a nuclear power plant "turn-key" including all equipment supply.</p> <p>Within this contract it is foreseen to establish a "procurement office" lead by the supplier but with participation of Belarus staff. So future experts can gain on job experience in nuclear procurement with the development of the project. All procurement will be done with the Procurement requirements of the main supplier. Within the framework of procurement the supplier has issued a "unified catalogue of equipment and services": Registration of Belarus enterprises in the catalogue requires quite a lot of information and needs time, however if they fulfil all requirements of the supplier they can apply to be included with their equipment or services in this catalogue.</p> <p>Also the QA requirements will be those of the supplier, however it was stated, that those are consistent with Belarus QA requirements.</p> <p>The design information is transferred mainly in electronic form using message encryption. A liaison manager should be nominated.</p> <p>Regarding plans to participate in appropriate "VVER Owner's group", the cooperation and mutual assistance agreements are in place and thus sufficient.</p> <p><u>Condition 19.1:</u> Milestone 2 reached.</p> <p><u>Gaps:</u> None.</p>
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EVALUATION Condition 19.1		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

19. Procurement		Phase 2
Condition 19.2: Procurement programme consistent with national policy for industrial participation established		
Basis for evaluation	Review observations	
<p>A procurement programme clearly described in the bid BIS that delineates the scope of supply for specific equipment and services. If the national policy for industrial involvement supports local involvement in construction or support services, evidence of a procurement team competent in:</p> <p>a) filing of: design descriptions, technical specifications, drawings of items to be procured; b) quality levels to be assigned, depending the relevance of the item ; c) standards and codes ruling the item; d) environmental qualification of the item (including storage conditions on the shelf, expiry dates, etc.); e) stock policy to be adopted (max/min levels); f) urgent procurement procedures.</p> <p>Formal equipment and services specifications have been developed by the owner/operator. Approved vendor list has been developed and a routine auditing programme is in place. A schedule identifying purchase orders placement dates and site arrival dates.</p>	<p>The Russian Federation undertakes to construct a nuclear power plant "turn-key".</p> <p>Quality control and auditing will be arranged according to the project plan and the quality assurance plan from the supplier. Belarus experts had informed the INIR team, that the plan is consistent with National QA requirements.</p> <p><u>Condition 19.2:</u> Milestone 2 reached <u>Major gaps:</u> None</p>	
EVALUATION Condition 19.2		
Actions needed		
SIGNIFICANT	MINOR	NO
		X
RECOMMENDATIONS		
none		
SUGGESTIONS		
none		
GOOD PRACTICES		
none		

ATTACHMENT 2: LISTS OF THE INIR TEAM AND COUNTERPARTS

IAEA Team

Leader: Mr. Jong Kyun Park, Director of the Division of Nuclear Power

Coordinator: Mr. Donald Kovacic, Integrated Nuclear Infrastructure Group

Members:

- Ms. Anne Starz, Head Integrated Nuclear Infrastructure Group
- Mr. Yury Troshchenko, Integrated Nuclear Infrastructure Group
- Mr. Steve Koenick, Department of Nuclear Safety and Security
- Mr. Vladimir Cisar, Department of Safeguards
- Mr. Abdelmadjid Cherf, Office of Legal Affairs
- Ms. Christelle Drillat, Office of Legal Affairs
- Mr. Ivan Videnovic, Department of Technical Cooperation
- Mr. Eberhard Grauf, Independent Expert
- Mr. Ivan Gorinov, Independent Expert
- Mr. Antti Piirto, Independent Expert
- Mr. Karol Janko, Independent Expert
- Mr. Lumir Nachmilner, Independent Expert

Country participants

Leader: Mr. M. Mikhadyuk, Deputy Minister of Energy

Coordinator: Ms. L. Dulinets, Ministry of Energy (Department of Nuclear Power)

Participants from Belarus

1.	Sobol E.I.	Grodno Regional Executive Committee
2.	Baliabin A.A	Ministry for Environment
3.	Ivashechkina L.S.	Ministry for Environment
4.	Jukova O.M.	Ministry for Environment (Republican Center for Radiation Control and Environmental Monitoring)
5.	Stankevich A.P.	Ministry for Environment (Republican Center for Radiation Control and Environmental Monitoring)
6.	Mozgo O.P.	Ministry of Architecture
7.	Solonikov O.I.	Ministry of Defence
8.	Hmelevski S.V.	Ministry of Economy
9.	Ostrovskaya T.V.	Ministry of Economy
10.	Maruda N.S.	Ministry of Education
11.	Vershina G.A.	Ministry of Education (Belarus National Technical University)

12.	Jivitskaya E.N.	Ministry of Education (Belarus State University of Informatics and Radioelectronics)
13.	Tolstik R.V.	Ministry of Education (Belarus State University)
14.	Bosenko T.A.	Ministry of Emergency Situations
15.	Dedul L.F.	Ministry of Emergency Situations
16.	Vetoshkina M.V.	Ministry of Emergency Situations
17.	Antonova V.S.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
18.	Astashko G.A.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
19.	Dashuk E.M.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
20.	Krutilina N.A.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
21.	Lobach D.I.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
22.	Lugovskaya O.M.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
23.	Malihina S.A.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
24.	Mihailov N.M.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
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26.	Shchetinin K.V.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
27.	Zaitsev S.I.	Ministry of Emergency Situations (Department of Nuclear and Radiation Safety)
28.	Emelianov V.J.	Ministry of Energy (Nuclear Power Plant Construction Directorate)
29.	Galanchuk S.F.	Ministry of Energy (Nuclear Power Plant Construction Directorate)
30.	Gorin.V.D.	Ministry of Energy

		(Nuclear Power Plant Construction Directorate)
31.	Juk M.M.	Ministry of Energy (Nuclear Power Plant Construction Directorate)
32.	Mikhadyuk M.M.	Ministry of Energy
33.	Apatski A.N.	Ministry of Energy (Belnapienergoprom)
34.	Chernousov S.V.	Ministry of Energy (Belnapienergoprom)
35.	Turkov V.V.	Ministry of Energy (Belnapienergoprom)
36.	Chikilev M.A.	Ministry of Energy (Department of Nuclear Power)
37.	Dulinets L.V.	Ministry of Energy (Department of Nuclear Power)
38.	Grusha N.M.	Ministry of Energy (Department of Nuclear Power)
39.	Larina E.E.	Ministry of Energy (Department of Nuclear Power)
40.	Pigulevski M.A.	Ministry of Energy (Department of Nuclear Power)
41.	Poluhovich V.M.	Ministry of Energy (Department of Nuclear Power)
42.	Verbitskaya O.S.	Ministry of Energy (Department of Nuclear Power)
43.	Visotski V.S.	Ministry of Energy (Department of Nuclear Power)
44.	Gurova E.V.	Ministry of Finance
45.	Krug N.I.	Ministry of Finance
46.	Raiman A.E.	Ministry of Foreign Affairs
47.	Kenigsberg J.E.	Ministry of Health
48.	Panchuk O.R.	Ministry of Health
49.	Zenkovich L.I.	Ministry of Information
50.	Drozd D.G.	Ministry of Internal Affairs
51.	Kahonov N.D.	Ministry of Labor and Social Protection
52.	Gurko O.B.	National Academy of Sciences of Belarus
53.	Popov B.I.	National Academy of Sciences of Belarus
54.	Beskaravaini V.P.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny)

55.	Gemgurov M.I.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
56.	Kuvshinov V.I.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
57.	Molodih A.V.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
58.	Nagula P.K.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
59.	Novash L.V.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
60.	Sikorin S.N.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny
61.	Vasilevich G.V.	National Academy of Sciences of Belarus (Joint Institute for Energy and Nuclear Research – Sosny)
62.	Kovalev D.V.	Republican Unitary Enterprise “United Operating Center”
63.	Sorokina N.V.	Republican Unitary Enterprise “United Operating Center”
64.	Barinov V.V.	Research and Design Institute for Energy Industry “Belenergoproekt”
65.	Korotkevich A.M.	Research and Design Institute for Energy Industry “Belenergoproekt”
66.	Kulanovskaja E.V.	Research and Design Institute for Energy Industry “Belenergoproekt”
67.	Korolkov A.V.	State Production Association of Power Industry “Belenergo”
68.	Porshnev V.N.	State Production Association of Power Industry “Belenergo”
69.	Prokazov S.G.	State Production Association of Power Industry “Belenergo”

ATTACHMENT 3: REFERENCES

1. Self-Evaluation of the Status of National Nuclear Infrastructure Development of Country
2. Strategy, Action Plan, and Cooperation Plan for Capacity Building to Enhance Gosatomnadzor of the Ministry for Emergency Situations 20.01.2012
3. The “Law of the Use of Atomic Energy” July 2008
4. Presidential Decree N. 565, Regulation on the Department for Nuclear Safety and Radiation Protection of the Ministry for Emergency Situations of Belarus 12 November 2007
5. Law of Belarus, 5 January 1998 г. N 122-3 on Radiation Protection of the Population (as amended 21.12.2005 and 06.11.2008)
6. **NOTE:** for a complete listing of all of the numerous laws, decrees, orders, etc. related to the nuclear power programme, please see the Belarus self-evaluation report.
7. INTERNATIONAL ATOMIC ENERGY AGENCY, Milestones in the Development of a National Infrastructure for Nuclear Power, IAEA Nuclear Energy Series No. NG-G-3.1, IAEA, Vienna (2007).
8. INTERNATIONAL ATOMIC ENERGY AGENCY, Evaluation of the Status of National Infrastructure Development, IAEA Nuclear Energy Series No. NG-T-3.2, IAEA, Vienna (2008).
9. INTERNATIONAL ATOMIC ENERGY AGENCY, Responsibilities and Competencies of a Nuclear Energy Programme Implementing Organization (NEPIO) for a National Nuclear Power Programme, Nuclear Energy Series No. NG-T-3.6, IAEA, Vienna (2009).
10. INTERNATIONAL ATOMIC ENERGY AGENCY, INIR: Integrated Nuclear Infrastructure Review Missions, – *Guidance on Preparing and Conducting INIR Missions (Rev.1)*, IAEA, Vienna (2011)
11. INTERNATIONAL ATOMIC ENERGY AGENCY, Relevant Safety Standards.