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# Communication dated 21 August 2013 from the Chairman of the International Nuclear Safety Group (INSAG)

On 21 August 2013, the Director General received a letter from the INSAG Chairman Richard Meserve, providing his perspective on current emerging safety issues. The aforementioned letter is circulated herewith for the information of the General Conference.

August 21, 2013

OFFICE OF THE PRESIDENT

**Richard A. Meserve**

rmeserve@carnegiescience.edu

SCIENTIFIC DEPARTMENTS

**Embryology**

BALTIMORE, MARYLAND

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STANFORD, CALIFORNIA

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WASHINGTON, DC

**Carnegie Academy for  
Science Education**

WASHINGTON, DC

Carnegie Institution  
of Washington

1530 P Street NW  
Washington, DC 20005

202 387 6400 Phone  
202 387 8092 Fax

Mr. Yukiya Amano  
Director General  
International Atomic Energy Agency  
Wagramer Strasse 5  
A-1400 Vienna  
Austria

Dear Director General Amano:

I am writing in my capacity as Chairman of the International Nuclear Safety Group (“INSAG”). INSAG’s terms of reference state that INSAG should provide “recommendations and opinions on current emerging safety issues” to the IAEA and others. During my term as Chairman, I have customarily sought to fulfill this obligation on behalf of INSAG by supplementing the various INSAG reports with my annual safety-assessment letter. My past letters are available at the INSAG website at <http://goto.iaea.org/insag>.

My last two letters have focused on the challenges that have been presented by the Fukushima Daiichi accident. In the 2011 letter, I discussed some of the substantive issues arising from the accident and, in the 2012 letter, I provided some broader observations concerning the accident and the international work that is underway. As you are well aware, there is a significant global effort associated with extracting and implementing lessons learned from the accident. In light of the effort by the IAEA to implement the Action Plan and to develop a comprehensive and credible report on the accident, with assistance by me and various members of INSAG, I will not comment on Fukushima matters here other than to recommend that the various actions in response to the accident be pursued with vigor and dedication. The accident represents a watershed event that will and should bring about substantial changes in safety obligations and approaches.

The 2010 letter focused on the particular challenge that is presented by the pursuit of nuclear power by a large number of countries with no previous experience with power reactors – the so-called “new entrants.” Although the Fukushima accident brought about a pause in these efforts, many of these countries are now forging ahead with implementation plans. As explained in the 2010 letter, all participants in the nuclear enterprise have an interest in assuring that these countries are able to fulfill their safety, security, and safeguards obligations. Assistance to these countries remains an international

obligation even as the responses to the Fukushima accident are pursued. IAEA activities in this area must remain strong.

In this letter I will focus on a different aspect of the IAEA's activities that provide an essential foundation for the achievement of the IAEA's safety mission – the IAEA's support services and its system for providing operating experience feedback. I take this step because some Member States are not making appropriate use of the services and are not sufficiently engaged in learning from the experiences of others.

## I. IAEA Review Services

The IAEA and its Member States make extensive efforts to promulgate safety standards that cover every aspect of nuclear design, operations, decommissioning and regulation. The standards include requirements that every operating organization, regulator and Member State is expected to satisfy and guides that provide information as to best practices that all should strive to achieve. They represent an important effort to build a knowledge base that provides a foundation for the IAEA's fulfillment of its safety mission.

An important counterpart to the safety standards is the IAEA's review services. These services provide the means to assist in the implementation of the safety standards and to assess compliance with them, as well as to assure that the purposes of the safety standards are fulfilled. The most long-standing service is the work undertaken by the Operational Safety Review Teams ("OSARTs"); these missions assess compliance with the safety standards at nuclear power plants ("NPPs"), as well conduct reviews of operational safety performance, examine factors affecting the management of safety and the performance of personnel, and evaluate "good practices" at the plants. The Integrated Regulatory Review Service ("IRRS") provides a counterpart assessment of the national regulatory infrastructure. The establishment of strong and capable regulators is an essential obligation of the Member States and thus the IRRS reviews serve a central IAEA function. A wide variety of ancillary services are available covering nearly every aspect of nuclear operations. See <http://www-ns.iaea.org/reviews/default.asp?s=7&l=57>.

These services provide many benefits:

- Most fundamentally, the services provide a means for peer-group assessment of compliance with the safety standards, thereby allowing attention to potential shortfalls. It is all too easy for a nuclear operator or regulator to become complacent and to be unaware of deficiencies. A review by outsiders with fresh eyes can bring attention to matters that might otherwise be ignored or misunderstood. It also provides an opportunity for continuous improvement through the application of best practices taught by others.

- Preparation for a review is a useful exercise by itself. Such preparation typically involves a self-assessment that can bring issues deserving of attention to the surface even in the absence of a review. A periodic preparatory audit is by itself a helpful discipline.
- The group of experts conducting the review learns from the experience. Participation as an expert in the review services can serve to broaden experience and knowledge and thereby build capability and awareness that helps both the Member State that is obtaining a review and the Member States that provide experts to assist in the reviews.
- The public availability of the reports arising from a review service can enhance transparency and thereby help to provide public confidence. Member states are generally encouraged to make mission reports publicly available. For example, the results of an OSART mission customarily become publicly available 90 days after official transmission to the host country, unless otherwise requested. Open access to a report can serve as a stimulus to correct any short-comings.
- All countries with NPPs have a responsibility not only to their own citizens, but also to neighboring states and the international nuclear community. International scrutiny using the IAEA services can provide confidence that these obligations are taken seriously and are being fulfilled.
- Participation in the review services is a means to show that the commitment to safety is real. Established nuclear power Member States need to set an example for new entrants by striving continually for enhanced safety and by being seen to do so.
- A follow-up review provides a means to ensure that lessons have been learned appropriately, as well as to provide public confidence that any problems have been corrected. An action plan implement by the Member State coupled with a follow-up mission to assess the steps that have been taken to respond to a review are an essential part of the process.

In short, the review services provide an extraordinarily useful means to make sure that the development of safety standards is more than a paper exercise, but has real-world application in the nuclear programs of the Member States.

We are disappointed to observe, however, that some Member States are not employing the review services as extensively as would be desirable. Although the Action Plan arising from the Fukushima Daiichi accident anticipated that Member States with NPPs would host at least one OSART

mission before September 2014, such missions have not been scheduled in 15 of the 31 countries with NPPs. Moreover, we note that several Member States have not hosted an OSART mission at any nuclear power plant for over 10 years (although the power plants have benefitted from inspections through the auspices of the World Association of Nuclear Operators (“WANO”)).

The participation in IRRS missions is also incomplete. Some countries with NPPs have never had the benefit of a mission. And many countries that have received an IRRS mission have not scheduled a follow-up. For example, major issues were identified in an IRRS mission to Japan in 2007 – that is, long before the Fukushima accident – but no follow-up mission to assess the adequacy of corrective actions was ever scheduled. It is noteworthy that the failings of the regulatory structure in Japan that have been identified in various analyses in the aftermath of the Fukushima accident were identified in the IRRS report in 2007, but not addressed.

I recognize that the preparation for a service mission can be time-consuming and that there is notable expense and work associated with hosting a mission and then pursuing the response to any issues that are revealed. Nonetheless, the services provide an important means for assuring safety. Greater use should be made of them. Indeed, the failure to utilize the review services may by itself be indicative of the possibility of fundamental deficiencies in the safety infrastructure in a Member State.

In this connection, it is appropriate to acknowledge that WANO provides regular reviews of NPPs. The involvement of nuclear operators with WANO occurs more frequently than is the case with OSARTs; commencing in 2015, WANO reviews will be conducted at every unit at four-year intervals (currently the reviews occur every six years). WANO’s activities are commendable and should be strongly encouraged. The important point, however, is that the focus of the IAEA reviews is somewhat different from those of WANO. The IAEA review of NPPs is mainly, although not entirely, conducted to assess compliance with the IAEA safety standards, whereas the WANO reviews are largely guided by industry best practices. The two types of review are complementary and reinforce each other. Moreover, the IAEA provides services beyond those offered by WANO, including, most importantly, a review of overall regulatory infrastructure. I note as well that the WANO reviews are confidential and thus are not available to regulators or the public; they do not provide the same level of public confidence that can attend an IAEA mission.

In sum, we urge that the Member States make greater use of the review services. You may consider it appropriate to communicate privately with those Member States that are not making full use of them.

## II. Operating Experience Feedback

An important complement to the use of review services is a commitment to share and learn from operating experience. Many of the Member States that make use of nuclear power have only a handful of plants. As a result, operating experience from around the world can provide insights that may not be available from direct experience. This operating experience can be an important source of information because serious events are nearly always preceded by less serious precursor events elsewhere. The probability of a serious accident could be greatly reduced if the lessons from precursors were learned and applied.

One of the important established channels for the sharing of operating experience is the International Reporting System for Operating Experience (“IRS”), which is jointly operated and managed by IAEA and the Nuclear Energy Agency (“NEA”) of the OECD. The foundation of the system is reports of operating experience that are submitted by Member States. While the quality of reports has improved in recent years, including both more detail and identification of the direct and root causes of events, we are disappointed to observe that some Member States with NPPs do not submit reports or submit them only infrequently. It is important for all Member States to provide complete and timely reporting of events.

The key criterion for submission should not be whether the safety event by itself is significant, but whether the safety lesson is significant. Thus low level events or “near misses” can provide lessons that should be communicated. Moreover, the system should not be restricted to reporting only events; other experiences involving organizational, training, management, or safety culture issues, as well as information of safety significance arising from research, testing or analysis, should be captured and shared. The sharing of best practices by those who have achieved exceptional performance could be a useful supplement to the information exchange.

An important element of the system is the distribution of high-quality and timely feedback on the lessons to be learned. Periodic summary reports of important lessons are available through the IAEA website, supplemented by topical reports on recurring similar events. See <http://www-ns.iaea.org/reviews/op-safety-reviews.asp?s=2&l=15#irs>. Moreover, some Member States are developing and submitting generic reports, providing information on trends and corrective action programs, to IRS. This is a good practice that INSAG encourages all Member States to follow. At the same time, WANO is providing helpful input guided by its interactions with operators. The aim should be to make the IRS a vital and important means for providing useful and actionable guidance to the entire nuclear community. In addition, the capture and retention of the lessons from operating experience should be seen as an important means to facilitate the transfer of knowledge and skills to the next generation of operators and regulators.

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INSAG has previously commented on the importance of operating experience feedback as a means for improving safety. INSAG, *Improving the International System for Operating Experience Feedback* (2008, INSAG-23). The strengthening of the operating experience feedback system remains an important matter.

In this connection, we note that the periodic review meetings associated with the Convention on Nuclear Safety provide a valuable opportunity for the peer review of technical and management issues related to the advancement of nuclear safety. The Contracting Parties are required to submit a report for the review meeting concerning the measures taken to implement the obligations of the Convention. I note that several Contracting Parties have submitted proposals to increase the effectiveness of the Convention. I encourage the enhancement of the review meetings as an opportunity for open and critical peer review and for learning from the experience of others.

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If more requests for the use of the IAEA review services are received, the IAEA must be prepared to undertake thorough reviews without undue delay. Moreover, further enhancement of the IRS will require a focused effort. I recognize that these activities may strain agency resources. But I am hopeful that the Member States recognize that the services and the IRS represent an important element in the IAEA's activities and that they require adequate budgetary and manpower support.

I hope that this letter is helpful to you. As always, please feel free to contact me if INSAG can offer further assistance on this or other matters.

Very truly yours,



Richard A. Meserve

cc: INSAG members  
Denis Flory