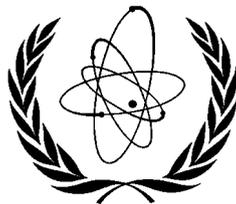


**Chairmen's Summary Report on the  
Fourth International Atomic Energy Agency Workshop on  
Lessons Learned from the Integrated Regulatory Review Service (IRRS) Missions**

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## **Introduction**

The fourth workshop on ‘*Lessons-Learned from Integrated Regulatory Review Service (IRRS) Missions*’ organised by the International Atomic Energy Agency (IAEA) took place in Moscow on December 9-11, 2014. The workshop served as an example of the transparency of the IRRS programme and continued the series of workshops, which took place previously in France (2007), Spain (2008) and Washington (2011). Strengthening IAEA peer reviews in order to maximize the benefits to Member States and enhancing the effectiveness of the IRRS missions are actions included in the IAEA’s Action Plan on Nuclear Safety. The Plan calls for actions by Member States and the Secretariat to achieve these objectives. This workshop provided an international forum for exchange of recent experience in the development and implementation of the IRRS programme from 2011 to 2014 and identified a number of areas for further development.

Approximately 47 senior regulators from 25 IAEA Member States (MSs) took part in the IAEA workshop, which was co-hosted by Russia’s ‘Rostekhnadzor’ and chaired jointly by Alexey Aleshin and Jim Lyons / Denis Flory. Alexey Aleshin, Chairman of Rostekhnadzor opened the workshop, welcoming the participants and highlighting the importance of learning from the Fukushima accident to improve international standards and regulatory systems, and emphasizing the importance of IRRS missions to help achieve this goal. Jim Lyons, Director NSNI and Gustavo Caruso, NSAP Special Coordinator, also delivered opening remarks. They thanked the participants and acknowledged the message of commitment demonstrated by their participation and their willingness to share knowledge and experience. They expressed the IAEA’s gratitude for the continued support and dedication of MSs and regulatory bodies through the hosting of IRRS missions and the provision of experts for the missions. They thanked Rostekhnadzor for hosting the workshop. Finally, they invited participants to openly and proactively interact during this workshop to gain the maximum benefit from their ideas to continue to strengthen IRRS missions.

## **Analysis of previous missions**

The workshop started with several presentations by IAEA, as an ‘*IRRS Lessons Learned Overview*’ in the contexts of nuclear safety, radiation safety and the regulatory aspects of emergency preparedness and response. Two IAEA-commissioned analysis reports were presented to the workshop; respectively entitled, ‘*The Analysis of IRRS Missions in 2006-2013 to Countries with Operating NPPs*’ and ‘*Analysis of IRRS Missions for the Period 2006-2013 from a Radiation Safety Perspective*’. Both reports being thorough reviews of mission

reports since the inception of the IRRS Programme in 2006, taking into account the IRRS process, outcomes, performance and effectiveness'. The report; '*Lessons Learned from IRRS Missions to Countries with Operating NPPs*' will be published in early 2015 and the report; '*Analysis of IRRS Missions for the Period 2006-2013 from a Radiation Safety Perspective*' is complete and was distributed at the workshop. It will also be placed on the IAEA's IRRS website.

*The Analysis of IRRS Missions in 2006-2013 to Countries with Operating NPPs* covers initial missions (22) and follow-up missions (9) conducted in 2006-2014 to countries with nuclear power plants. The IAEA presented an overview of the IAEA safety standards which were used as references for IRRS mission observations, as well as information on the number and nature of observations. An analysis of lessons learned in nuclear safety and the recurring safety issues, based on technical subject groups was presented. In the case of follow-up missions, despite the limited sample of missions, an analysis was conducted for the issues closed and those that remained open. It was concluded that the analysis of the data from the IRRS missions carried out is a useful input for focusing the IAEA efforts to provide support to the governmental, legal and regulatory frameworks of MSs.

During discussion, the selection process for the IRRS experts was discussed. Participants also highlighted the importance of the follow-up mission and thus, given the few requests for IRRS follow-ups to date, the necessity to include the follow-up as part of the whole IRRS process implicitly requested as a 'package' with the original mission. Objectivity of the IRRS missions in particular applying the IAEA Safety Standards consistently and appropriately was highlighted. Rigour of the observations is an essential aspect to ensure consistency and the need to produce realistic recommendations enabled to be implemented. Awarding good practices to be disseminated to the MS is also relevant to contribute and encouraging MS to improve safety regulations. Key conclusive points were made in particular to make recommendations that will have a positive impact on the regulatory activities of the host MS.

It was agreed that follow-up missions should include a detailed review for those recommendations that were not implemented during a time frame between the initial and follow-up mission. Assessment of the requirements for EPR in the regulatory domain, assessment of non-radiological impact issues for EPR and systematic assessment of EPR exercises were presented.

The presentation of the analysis of IRRS missions from a radiation safety perspective revealed there have been concrete improvements in the rigour and quality of IRRS mission reports over the years. However, the analysis report highlighted a number of ‘themes’ representing various aspects of the IRRS programme that may benefit from review. The analysis report describes these issues with evidence from the 50 IRRS reports reviewed and provides proposals for addressing these improvement opportunities thematically.

On several occasions during the workshop participants re-emphasized that the number of recommendations and suggestions should not be used as a compliance ‘score’ of the current status of any State relative to the IAEA requirements and cannot be used to compare MSs.

### **IRRS mission preparation and self-assessment**

Participants highlighted the importance of the preparatory work and the self-assessment process. Repeatedly it was made clear that self-assessment is at least as important as the IRRS mission itself, not least as a learning process for the host state. Participants emphasized the significant time and effort required to perform the self-assessment using SARIS and suggested that there may be room for improvement in making the preparatory process more valuable and efficient. While it is acknowledged that the self-assessment is a useful undertaking, it is also one that currently consumes significant resources, due mainly, to the number of questions that have to be studied, answered and analysed. Some possible improvements to the self-assessment questionnaire were discussed, including making the questionnaire shorter, bringing it into line with the IRRS review modular structure and grading the importance of the questions, with a possibility to deepen the responses based on the importance of the question.

There was also an opinion that the self-assessment tool, SARIS, could be better structured and less fragmented, which could contribute to enhancing the efficiency of the self-assessment process. A number of participants highlighted that the SARIS tool is very useful and contributed to a structured and systematic self-assessment process. Some participants considered that the host action plan was the most valuable output of the preparation phase, and was considered as the host’s commitment to implementation of the actions identified during the self-assessment.

In some cases participants noted a divergence between the self-assessment results and the experts’ findings as recorded in the IRRS report. It was suggested that such differences should

be further analysed. Proposals were made for recognising that host country's self-assessment had identified enhancement issues prior to the mission, by mentioning this in the report or by creating an Action Plan Commitment Category, in addition to the missions observations (recommendations, suggestions, good practices).

Participants from countries where the English language is not routinely used, identified the challenge of translating significant amounts of material for the Advanced Reference Material. This can also require significant time and resources. Participants discussed the importance of properly identifying what needs to be translated and to what extent.

Participants agreed the action plan, which is the ultimate output of the self-assessment, is very useful and should have an important place in the IRRS process.

Participants stated that it would be useful to have feedback on the advance reference material and on the self-assessment in advance of the mission.

### **IRRS mission conduct**

Participants expressed their general appreciation for the way IRRS missions are conducted but identified some areas for improvement.

The duration of missions and in particular, the balance of hours assigned to interviews/fact-finding and report writing was the subject of considerable debate. There was a general agreement that the fact-finding proportion may be too short and reduces the effectiveness of the peer-review aspects, notably, knowledge sharing between the reviewers and the counterparts.

IRRS team selection was discussed. Participants observed that team size seems to be increasing, posing a logistical and financial challenge that should not be underestimated by host countries. They pointed out the importance of ensuring the participation of reviewers from the region, to enhance sustainability of the knowledge transfer and a balanced representation on the review team.

To reduce the team size, it was suggested that some experts could cover more than one area and the review of modules 1 to 3 could be integrated and combined.

Some participants expressed a desire to have more observers take part in IRRS missions. Generally, although it was agreed that this would contribute to training more experts in IRRS methodology, given the size of the teams, increasing the number of observers would be very difficult.

Participants discussed the fact that IRRS, as a review of the national framework for safety, will often need to engage several national organizations having regulatory responsibilities and functions addressing the various aspects of nuclear and radiation safety, including EPR. There was a discussion on the need to involve all such regulatory bodies in the preparatory process and in the mission as well, though it was recognized that this may be unrealistic or unnecessary in some cases.

The importance of emergency exercises during the mission was discussed. Participants agreed it is very useful to witness how operators, others and RB officers perform during an emergency and to evaluate their performance but, the time and resources required, given the short duration of the mission, may not justify the conduct of such exercises during an IRRS mission.

The IAEA presented lessons learned regarding the review of EPR (module 10) and explained that this module should focus more on the regulatory aspects of EPR within the authority of the regulatory body and the interface with other organizations who also have a rule setting role in EPR. The participants agreed that the revised module 10 focus is more appropriate for IRRS missions and suggested that there needs to be a clear distinction between IRRS missions and other IAEA peer review missions in EPR.

### **Mission results**

The review of previous IRRS missions indicated inconsistencies between reports and in the way requirements have been interpreted by various review teams. Participants discussed the need for discipline and rigour in the determination of findings, suggestions and recommendations. In particular, there is a need to minimize differences in the way requirements are interpreted and to maximize consistency between reviewers and between missions. This points to the need for continued and rigorous training and clear guidelines on how to formulate and when to formulate suggestions and recommendations.

The participants brought up the importance for the team to take into consideration the practicality of each recommendation, given the national context and in consultation with the counterparts. Therefore, it is possible for the same observation to lead to different conclusions in different countries. This is particularly true when recommendations involve the higher government levels. The approach needs to be flexible and take into account the national

context and whether or not a recommendation will be feasible and lead to true safety improvements.

A suggestion was made on the need to grade findings: those that are not really significant should not be mentioned; those that reflect issues already identified in the self-assessment should be acknowledged as such; new findings should be clearly highlighted. Participants agreed that a manner by which this may be recognized in the report should be examined. The same goes for Good Practices; there is a need to make a difference between good practices in the context of a country with limited resources, to reflect an outstanding effort, and a good practice that is truly unique and should be emulated by other countries (good practices should not be recurring over time).

### **Closing the mission**

Participants highlighted the need for the media communications strategy and approach by the IRRS team, in particular the team leader and senior IAEA representative, needs to reflect and be consistent with that of the host country and its degree of transparency and openness.

### **Follow-up IRRS Missions**

The participants agreed that follow-up missions are very important and therefore should be in effect, a ‘compulsory’ part of the IRRS package. Participants suggested that, when the time comes for a follow-up mission, in the absence of a request, the IAEA could consider sending a letter to the relevant MS to encourage the invitation.

Participants also suggested that the time between the main mission and the follow-up should be long enough to allow the host country to effectively address the recommendations and suggestions. Observations should also be written cognisant of this time frame or clearly allow for a longer term for implementation. It was suggested that the follow-up mission should take place 3 to 4 years after the main missions, instead of 2 to 4 years.

### **Coordination with other peer review missions**

Participants expressed the need to rationalize and better structure the IAEA review missions, to avoid review overload, overlaps between missions and inconsistencies in findings. A suggestion was made that IRRS should be an overarching mission on the regulatory structure in the country, encompassing the regulatory aspects of all other missions. Some participants also noted that, particularly for embarking countries, the number of recommendations and actions resulting from all the missions, including for example INIR and IRRS, can be overwhelming and confusing for senior government officials.

## **Improving the IRRS Programme**

A number of IRRS programme aspects that may benefit from improvement were discussed including the tendency for some regulatory issues to recur persistently as IRRS recommendations. This appears to indicate the need for discipline in drafting IRRS reports, such that conclusions reached on recurring issues are consistent across every mission, that similar observations in each country use the same bases; and if it is some particular IAEA requirements that MSs are having difficulty in implementing fully, then IRRS observations should directly contribute to the continuous improvement of IAEA safety standards.

IRRS as peer review was discussed. IRRS Guidelines state a peer review should be a validation of the host country's self-assessment, but the workshop considered that the self-assessment is not evidentially used during missions and in compiling the IRRS report.

Participants agreed that the existing IRRS criteria for good practice should be rigorously applied.

The latest improvements of the IRRS programme, including the current IRRS Guidelines, IRRS initial and refresher training, IRRS Mission documents and tools (SARIS, ARM template, template schedule, mission report template, etc.) together with feedback from participants in the process, measuring effectiveness and efficiency and prompt evaluation report for countries with operating nuclear power were also presented.

Following presentations by the IAEA on the latest improvements to the IRRS methodology, a panel discussion was held, during which the participants made suggestions for improving IRRS missions.

Some participants expressed interest in the existence of discrepancies between mission findings and also variable interpretation of IAEA requirements. Participants voiced great interest in ensuring this be addressed. The IAEA explained it is the responsibility of IAEA IRRS coordinators to ensure a consistent and common understanding of the safety standards during the course of a mission.

Some participants suggested that data available in RASIMS should be made available to reviewers prior to a mission. It was agreed this might be possible, provided the relevant country accepted to release such information to the reviewers. In practice, the country should have included RASIMS data in its self-assessment and ARM.

A suggestion was made to review the IRRS mission schedule to include a presentation by the counterpart for each module on the results of the self-assessment and the action plan, for interactive discussion with the experts.

The question of the grading on non-compliance was again brought up; it is addressed above. In the same vein, a suggestion was made that only “heavy weight” recommendations should be included in the report. Another involved the division of suggestions and recommendations into short, medium and long term improvement actions. It was generally agreed that this issue needs to be addressed at least by ensuring that important recommendations are not diluted by a large number of less important issues. All participants agreed that the number of suggestions and recommendations needs to be realistically manageable. There was also discussion that reports should clearly indicate whether a requirement is fully met in that all its elements are in place. Where this is not met, even in part, then a recommendation should be made. Also, absence of a recommendation specific to any requirement does not necessarily mean that a requirement is met.

There was considerable further discussion on the mission schedule and time devoted to fact-finding. The point was made that report writing is actually much more than merely drafting. It is a period of building consensus amongst the IRRS team and agreement on emphasis and the priorities for the report. A suggestion was made to provide only a rough draft of the report at the end of the mission, which would allow more time for fact finding and discussion with counterparts. However, it was agreed this would unduly increase the effort and logistical complexity of completing the report after the mission.

A suggestion was also made for the IAEA to write to the government to encourage consideration of actions resulting from suggestions and recommendations made to the government and outside the scope of the regulatory body’s authority.

Participants agreed that, for the countries that have not yet hosted IRRS missions, priority should be given to those that present the highest risk and for which the SARIS and as appropriate, RASIMS profiles indicate the most significant gaps.

### **Implication of the Fukushima Accident on the IRRS process**

The IAEA presented the approach to look at the implication of the Fukushima Daiichi accident on the regulatory processes and effectiveness. The participants agreed that this was a very important aspect of the IRRS mission. They also expressed the view that the historical

results provided appear a bit optimistic, and suggested that the IAEA re-examine the Fukushima module review methodology to ensure it is fair and accurate.

## **General**

Participants discussed a proposal for a steering committee on the development and future evolution of IRRS missions.

The distribution of IRRS missions internationally is very uneven, with the great majority in Europe, a few in Africa and almost none in Asia and Latin America. Only a small fraction of IRRS missions have been truly integrated (full scope).

Participants took note of the results of the analysis of previous IRRS missions and of the proposals for continued improvement of missions, some of which are already implemented.

## **Actions**

1. The IAEA will review the SARIS question sets to optimize them.
2. The IAEA will reinforce the reliance on the IAEA coordinators during the missions to ensure consistency between missions regarding the interpretation of IAEA safety standards and the development of suggestions and recommendations.
3. The IAEA will explore ways to systematically include a formal review of the self-assessment, module by module, with the counterpart, in the IRRS review schedule, to ensure that the self-assessment results are taken into account in the mission.
4. The IAEA will implement the existing IRRS Mission Tools, including the ARM template, standard schedule, mission report template, evaluation and feedback mechanisms, in a consistent way.
5. The IAEA will examine ways to identify or recognize observations that are already contained in the host country self-assessment.
6. The IAEA will examine ways to ensure good coordination and minimize overlaps between the existing peer review missions.
7. The IAEA will consider the possibility of developing and delivering specialized training for the team leaders and deputy team leaders.
8. The IAEA will complete the compilation of observations from all IRRS missions and find a mechanism to make it available to Member States.
9. Member States requesting future IRRS missions will include a follow-up mission as part of the package.



## **Conclusions of Workshop**

The workshop provided an important opportunity to strengthen the international peer review process. The support and improvement proposals made by the participants will contribute to the continuous improvement of the IRRS mission effectiveness.