Experience hosting IRRS-ARTEMIS Combined mission to Spain

Technical Meeting on Peer Reviews and Advisory Services in the Areas of Nuclear Safety and Security

IAEA- 29-30 Juny 2020

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Commissioner CSN
Introduction

Agreed IRRS-ARTEMIS Schedule

IRRS-ARTEMIS Combined mission

Host country views

Conclusion:
At the request of the Spanish authorities, the IAEA organized the first **IRRS-ARTEMIS Combined Mission** in October 2018.

According the provisions of EU Directives **2014/87/EURATOM** and **2011/70/EURATOM**, Member States shall, **at least once every 10 years**, arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and competent regulatory authorities with the aim of continuously improving SAFETY.

**IRRS**: Peer Review Service to assess the status of the national regulatory framework against IAEA safety Standards.

**ARTEMIS**: Peer Review Service for managing radioactive waste and spent fuel, decommissioning and remediation.
Agreed IRRS-ARTEMIS schedule
## Agreed IRRS-ARTEMIS Schedule

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<th>Year</th>
<th>IRRS</th>
<th>ARTEMIS</th>
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<tr>
<td>2016</td>
<td>Official request to IAEA</td>
<td>SARIS Training</td>
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<td>Info Meeting IM #1 IAEA-Spain</td>
<td>Preparation</td>
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<td>Preparatory Meeting IAEA-Spain</td>
<td>Answering (SARIS)</td>
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<td>2017</td>
<td>IM #2 IAEA-Spain</td>
<td>Analysis</td>
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<td>Action Plan preparation</td>
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<tr>
<td>2018</td>
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<td>Action Plan implementation</td>
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**Internal Reviews and Self-Assessment (IRRS-ARTEMIS)**: October 2018
IRRS-ARTEMIS Combined Mission
SCOPE

IRRS

• Responsibilities and functions of the government
• The global nuclear safety regime
• Responsibilities and functions of the regulatory body
• Management of the regulatory body
• Authorization, review and assessment
• Inspection and enforcement
• Regulations and guides
• Emergency preparedness and response
• For all regulated Facilities and Activities, and Exposure Situations


ARTEMIS

• National Policy and Framework for radioactive waste and spent fuel management
• National strategy for radioactive waste and spent fuel management
• Inventory of spent fuel and radioactive waste
• Concepts, plans, and technical solutions for spent and radioactive waste management
• Safety case and safety assessment of radioactive waste and spent fuel management activities and facilities
• Cost estimates and financing of radioactive waste and spent fuel management
• Capacity building for radioactive waste and spent fuel management – expertise, training and skills.
COMBINED REVIEW TEAM

- **36 Members**
  - 24 Senior Experts from 16 IAEA Member States:
    - *TL + 16 IRRS + 7 ARTEMIS*
    - Average 30 years of relevant experience /expert
  - 6 IAEA staff members
  - 2 IAEA administrative assistants
  - 4 observers (EC, Germany (2), Bangladesh)

STRUCTURE

**Review Team + observers**

**IRR**
- Team Leader
  - V. McCree
  - Former EDO US-NRC
- Deputy Team Leader
  - C. Magnus Larsson
  - ARPANSA
- Section Head
  - D. Senior
  - IAEA
- Team Coordinator
  - J-R. Jubin
  - IAEA
- Deputy Team Coordinator
  - R. Pacheco Jiménez
  - IAEA

**Review Team + observers**

**ARTEMIS**
- Team Coordinator
  - G. Bruno
  - IAEA
- Deputy Team Coordinator
  - C. Hill
  - IAEA
- Deputy Team Leader
  - F. Besnus
  - IRSN
FOLLOWED PROCESS
BY REVIEW TEAM

• Reviewed Advanced Reference Material
• Reviewed documents and interviewed counterparts
• Observed inspections on site:
  • Vandellós 2 NPP
  • José Cabrera NPP (under decommissioning)
  • Hospital Puerta de Hierro
  • SGS Techno Industry
  • Juzbado Fuel Assembly Factory
• Discussed policy issues (IRRS):
  • Financial independence
  • Human resources
• Discussed findings among the team and counterparts
• Formulated recommendations, suggestions and good practices
Huge associated workload to the preparation and execution of the IRRS-ARTEMIS Combined Mission:

- **CSN**  >13,500h of senior experts
- **ENRESA**  >1,500h of senior experts
- **Total**  >15,000h of senior experts

- **IRRIS-ARTEMIS Self-Assessment Report more than 1,000 pages.**
Host Country Views
HOST COUNTRY VIEW: ARTEMIS

PREPARATION

• Self assessment is a fundamental basis to facilitate and orient the peer review process. It implies a very important effort for the elaboration and coordination of documents. A good coordination among the different participants is critical in order to avoid duplications and facilitate the peer review process. The workload estimate was around 1500 h.

• It is important to organize a response working team with senior experts from all involved organizations.

• ARTEMIS questionnaire can be further elaborated aiming at better orient the responses and avoid repetitions. Possibly explanation and illustration at some of the questions can be needed to better focus responses.

• Some previous guidance to select the Advance Reference Material, in particular when translations are needed, can help.

• Taking into account that decommissioning activities are in the scope of the IRRS mission, some specific waste management related topics could be left uncovered. For a combined mission, decommissioning could need some further consideration.

• A clear list of IAEA safety standards should be made available for the preparation of the peer review process.
PEER REVIEW

• Open, transparent and constructive discussions during the whole process.

• Earlier feedback from the IAEA to the self assessment report and ARM can help in preparing the peer review presentations and therefore to better orient the discussions. A clear conductive line in the review process is critical to achieve a good understanding of the host country programme.

• Visits to radioactive waste management facilities can be very helpful to understand the host country system. They are time consuming and therefore this should be taken into account in the peer review schedule.

• Although difficult, harmonization of review criteria among the review experts should be a goal.

• It is very important for the host country to have available the preliminary conclusion report with sufficient time in order to make sure that the review outcome is adequately reflected, in particular when a different language is involved.
HOST COUNTRY VIEW: IRRS

PREPARATION

• Self-assessment is an essential part of the peer review process and implied a very important effort for the regulatory body. Estimation of total workload was more than 13.500 h for the IRRS Mission. → Involved all senior organization.

• **Selection of Analysis and Response Team** was done at the early stages and, besides, some flexibility was required during the process → retirement, sick leave during the self-assessment.

• Response (answer, analysis and action plan) to the **SARIS questionnaire** was a heavy task → very detailed questions, and duplication in some cases. There is a potential for further optimization to improve the focus on relevant aspects for the Host country. Difficult to harmonize.

• Positive feedback on **SARIS Training** and IT support during the preparation phase → SARIS should be more user-friendly. Needs time for familiarization of respondents with methodology (ej: primary and secondary questions, upload references, etc.)
HOST COUNTRY VIEW: IRRS

PREPARATION

• **Initial Action Plan** was validated by all institutions impacted by the identified actions, and was approved by the CSN Board. → it is important that all the involved institutions commit with it as a roadmap before the mission (short-term actions). After the mission, the initial action plan shall be updated with the outcomes of the mission.
  o Positive mechanism to define roles and responsibilities, to track the progress, and to foster continuous improvement.

• **Summary Report** was prepared based on the answers to the SARIS questionnaire. → the template of this document should have the same structure than the SARIS questionnaire to facilitate its preparation straightforwardly.
  o Important ‘executive’ document to summarize the self-assessment (reduction of 90%)

• **References** are valuable to give evidences in advance. → Non-English speaking countries shall translate it on a reasonably basis (it may be stated at ToR for the mission).
HOST COUNTRY VIEW: IRRS

PREPARATION

• Review should be carried out taking into account **IAEA standards included and available** at the moment of answering the SARIS questionnaire → special care should be taken when new standards are being published after ARM submission.

• **Involvement of other national institutions** shall be identified at early stages, and it strongly depends on the organization of the Host country (allocation of responsibilities) → for example in Spanish case, module of medical exposures required participation of the Ministry of Health and CSN.
HOST COUNTRY VIEW: IRRS

PEER REVIEW

- Smooth and positive mission. Open and constructive discussions.

- IAEA should ensure, for better coordination in IRRS, that the structure (modules) of the SARIS questionnaire, Summary Report, Mission Report and Interviews during the mission are exactly the same.

- It is desirable to previously establish a biunivocal correspondence team expert ↔ host counterpart for each module

- Number of site visits shall be balanced and compatible with interviews schedule. → Site visits, if carried out far away from the review, may entail more than 1 day off for the experts.

- IAEA should ensure more harmonization between expert criteria. → Decrease subjectivity when proposing recommendations/suggestions/good practices.

- Clearly define status and criteria for good performance areas
HOST COUNTRY VIEW: IRRS

PEER REVIEW

• For IRRS, Review Experts should take as a reference IAEA safety standards (fundamentals, requirements, and safety guides). → Practises in each country may be a good guideline but they can not be the reference for the peer review.

• Review Experts should review/use the whole ARM. → In some modules, answers to the SARIS questionnaire were not fully used as the material support.

• There were high-level interviews of the Team Leaders with CSN Board, and Secretary of State of Energy.

• Extremely positive experience to foster internal team-work at the regulatory body. → Cross-teams, integration of staff from different areas, etc.

• Positive policy discussions. However, limited time to get useful conclusions for the Host country. → It may be positive for the Host country to receive written documents before the discussion (i.e. answer to questions proposed by the Host country, etc.)
Positive view of IRRS-ARTEMIS combined mission. However, there is a room for further improvement, particularly regarding coordination between institutions. → Coordination at Host country was carried out through a national coordination team, and at a lower level.

Identification of interfaces between IRRS and ARTEMIS modules was done since the early beginning. → Mixed teams of ENRESA/MITECO/CSN staff. Important to keep consistency, and ensure coordination during all stages.

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<tr>
<th>IRRS</th>
<th>ARTEMIS</th>
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<tr>
<td><strong>Module 1</strong>: Responsibilities and functions of the Government</td>
<td><strong>Topic 1B</strong>: Legal, regulatory and organisational framework</td>
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<tr>
<td><strong>Module</strong>: Safety Requirements for predisposal of radioactive wastes,</td>
<td><strong>Topic 5</strong>: Safety case and safety assessment of radioactive waste and spent fuel management activities and facilities</td>
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<tr>
<td><strong>Module</strong>: Safety Requirements for disposal of radioactive waste</td>
<td><strong>Topic 7</strong>: Capacity building for radioactive waste and spent fuel management – expertise, training and skills</td>
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Size of the review team (and attendance of observers) should be commensurate with the size of the involved institutions (staff) at Host country.

Logistics between IRRS / ARTEMIS parts should be further integrated at IAEA level → Although it is important to keep independent logistic arrangements for both missions, shared events (i.e. coordination meetings during the mission, etc.) should be better communicated and coordinated between IAEA and the Host country.

Joint Final Report, with two identified parts. → Difficult to timely coordinate all comments provided by all involved institutions during the mission.

Joint press release and press conference → Positive experience for effective and integrated communication to the public and the media.
Host Country View: IRRS-Artemis

- Agreed scheduled during the peer review required significant coordination and flexibility efforts between all involved parties.

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<td>Initial Team Meeting</td>
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<td>Ent. Meeting</td>
<td>Interviews / Site visits</td>
<td>w/ Secr. State</td>
<td>Interviews</td>
<td>Policy issues</td>
<td>Finalisation of Draft Report</td>
<td>Social Event</td>
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<td>Interviews</td>
<td>w/ CSN Board</td>
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<td>Finalisation DR</td>
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<td>ARTEMIS</td>
<td>IRRS</td>
<td>SHARED</td>
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CONCLUSIONS
CONCLUSIONS: Main Pros & Cons of the Combined Mission

**PROS**

- There are synergies between both missions that may lead to an increase of effectiveness when preparing and executing both missions.
- It is a manner to reduce the overload to regulatory authorities and operators, specially, in the current situation with limited human resources.
- Preparation of the mission and Action Plan follow-up may be better integrated if both missions are combined since it is easier to share a unique roadmap.
- Host Country Team Leaders may have an improved global overview of both missions for proper management and coordination.

**CONS**

- Higher effort of coordination is required between national institutions, and at IAEA side as well.
- Simultaneous activities during the mission may challenge the optimum execution of the mission (i.e. same expert for different topics, etc.)
The IRRS-ARTEMIS mission

- has contributed to strengthen the regulatory framework in nuclear safety and radiation protection in Spain, as well as to improve the policy, strategy and management of spent nuclear fuel and radioactive waste in the country.
- has improved the coordination between the institutions involved in these topics: Ministry MITECO, CSN Nuclear Safety Council, ENRESA, Ministry of health
- has fostered internal team-work at the regulatory body. → Cross-teams, integration of staff from different areas, etc.
- has increased the credibility of the nuclear regulatory system and the management of radioactive waste in front of the society.
  - Communication of methodology and results to the society (follow link) and the Parliament. Exchange of information with peers in European and international events.
  - Available final report at IAEA website, CSN & MITECO websites; submission of the final report to the European Commission.
CONCLUSIONS: Efficiently and effectively

• We consider very interesting the work developed by ENSREG in order to increases efficiently and effectively in IRRS and ARTEMIS missions. It is important to optimize at maximum these missions.

• Efficiently and effectively it is very important.

• It is needed to avoid to overload regulatory authorities and operators, with several review works that currently they have to fulfil due to International regulations, specially, in the current situation with limited human resources.
CONCLUSION: IRRS-ARTEMIS COMBINED MISSION

Leaders from:

- CSN, Nuclear Safety Council
- MITECO, Ministry for the Ecological Transition
- ENRESA, Radioactive waste national company.

agreed that, from the Spanish perspective, a combined mission has been positive, and better than two separated missions.

Mainly for efficiency and effectiveness.
After the experience hosting IRRS-ARTEMIS Combined mission to Spain and after participate in several International meetings in order to improve IRRS and ARTEMIS missions in Europe and global, We suggest for the future, that IAEA should have as soon as possible in his portfolio tree missions, and each member state with his particular situations could choose freely the option that feeds better with his needs, and in order to fulfil the Directives 2014/87/EURATOM and 2011/70/EURATOM:
CONCLUSIONS: Suggestion for the future-2

Current IAEA portfolio:


Currently this two missions can be developed in the format “combined” or “back to back”.

Future IAEA portfolio (to set up as soon as possible):

3. Fully integrated IRRS-ARTEMIS

Each member state could choose freely the option that feeds better with his needs.
END