42nd Meeting of the Waste Safety Standards Committee

28 November – 1 December 2016

Agenda item W 6.5

Progress report on ARTEMIS

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Presentation contents:

✓ Chronicles
✓ Current status
  • Draft ARTEMIS guideline & self-assessment
  • Surrounding activities
  • First missions
✓ Path forward
Decades of IAEA’s assistance in RW&SF management – going back to 1980s

Archive records of recognized need to provide a service to Member State - date back to as early as c.a. 2010 (or before)

Need for an integrated approach - joint activity of two Departments of Agency: Department of Nuclear Safety & Security and Department of Nuclear Energy

c.a. 2010/2011 - First recognized key points:

• the Service should, amongst others, take account of:
  • RW & SF management, decommissioning and environmental remediation;
  • Variety of needs of organizations and entities;
  • Different peer reviews in this area covered by different organizations;
  • Building on the available in-house experience
  • Various approaches to conduction of peer reviews: consultation vs. audit;
  • Lessons learnt and good practices how to organize (internally and externally) and conduct the reviews
2013:
• Three sections of the two departments: WTS, WES and NFCMS work together on the Concept paper on the joint IAEA review service
• December 2013: DDG-NS and DDG-NE sign an internal office memorandum to officially launch:

ARTEMIS
Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation

• In parallel – discussions with the IAEA, whether ARTEMIS could support EU MS in fulfilling their obligations resulting from the “Waste Directive” – reviews of national frameworks, policies & strategies
→ recognized significant group of similar reviews – urgent needs
→ facilitated progress in developing ARTEMIS review service
For memory keeping, record of brainstorming on the name for the Service:

**IRWAM**: International Spent Fuel and Radioactive Waste Management Reviews

**SeRa**: IAEA Review Services in Radioactive Waste [Safety and/or Management]

**WaMaRS**: Waste Management Review Services

**IRWaS**: Integrated Radioactive Waste [Safety and/or Management] Services

**ISRAD**: Integrated Services for Radioactive Waste Safety & Management

**RadWaSS**: Radioactive Waste Safety Services

**RadWaRS**: Radioactive Waste Review Services [sounds like StarWars!]

**RAMIRS**: Radioactive Waste Management Integrated Review Services

**RAMASES**: Radioactive Waste Management Advisory and Review Services

**RAMIRES**: Radioactive Waste Management Integrated Review Services

**IREWARD**: Integrated Peer Review Service for Waste Remediation and Decommissioning

**RwaPeR**: Radioactive Waste Peer Review Services (with or without the R)

**PREvieW Services**: Peer Radioactive Review Services (with or without the P)

**IREvieW**: Integrated Review Service on Radioactive Waste

**IRAWMPR**: International Radioactive Waste Management Peers Review Rad-Man

**IWMR**: International Waste Management Review

**ARTEMIS**: IAEA Radioactive Waste Management Integrated Review Service
Draft ARTEMISIS guideline  
– general information

Draft developed with support of a few consultancies 2014 - 2016

Guideline contents

• Introductory part – objectives, scope of application, principles & basis, benefits, etc.
• For what and for whom? – ARTEMISIS structure
• How and who? – Review process practicalities
• Appendices (glossary & responsibilities of Review Team)  
  – integral part of document
• Annexes (exemplary ToR, “to do” checklist)  
  – supporting information
Variety of reviews in RW & SNF management conducted by the IAEA for decades
Covered variety of aspects, ranging from general to specific

Some examples of past reviews:

- National policies, strategies
- Management of Specific waste types
- Surface disposal
- Geological disposal
- Borehole disposal
- SNF dry storage
- Other specific aspects

ARTEMIS is an integrated service (!)

Bases on Safety Standards & international good practices
Acknowledges NE Series technical guidance adequate to the needs
May consider other documents of relevance – TECDOCs, Safety Reports, etc., as needed

The structure build on in-house experience needed some generalized systematics, but
with maintaining flexibility
Considering experience and lessons learnt from other IAEA review services – IRRS, INIR
We have our DSRS(*) to do something more about finally, we all know there are issues!

How do we plan for it? There are so many uncertainties!

Where will we fund it from?

Why, isn’t it good as it is?

Please consider the situation, options and possibilities and we will proceed

There are many uncertainties: (a, b, c, d)... some manageable, but we don’t know how to address (b), which influences (d) & (x)...

I have two staff. Who will do it?

The elections are coming...

(*) – any other aspect, e.g.: policy for overall RW/SNF management; large LL-LLW volumes; NORM; HLW; storage, disposal, etc. ...

Any organization involved:
- decision making organ, thinking of policy, strategy, project
- WMO, thinking of implementation and improvements
- regulatory body, thinking of inspections or monitoring...
### Peer Review Domains

- National policy, framework and strategy
- Decommissioning
- Predisposal
- SNF management
- Disposal
- Remediation

### Topics

- Policy and framework
- Strategy/programme
- Inventory
- Concepts, plans and technical solutions
- Safety
- Costs and Financing
- Expertise, training and skills
- Other topics as needed
Practical examples:
1. Review of specific topic in selected domain (for example: siting of a repository, SF dry storage…)
2. General, national-wide review (National policy, framework and strategy)

IAEA terminology/approach:
(1) flexibility;
(2) glossary
General process overview
Objectives, principles, benefits, costs

Preparations - preparatory phase
Objectives - What is it for, what can be achieved?
Reference Material – general information on scope, type/content of documentation to be presented for review
Review Team – selection, organization, responsibilities
Self-assessment
Organizational aspects

Review mission
Objectives
Responsibilities of the Review Team during the mission
– initial meetings, wrap-ups during, etc.
Conduction of the review – discussions with MS
Entrance & exit meetings
Drafting the mission report – how it is done?

Reporting – final report
Objectives
Findings and Outcomes
Finalizing the mission report
Action plan – what is it for and why is it worth to do it?

Follow-up option
Objectives
Follow-up review process
Follow-up review mission
Reporting outcomes of the follow-up
Graded approach for:
- size of review team
- duration of mission
- scope of review

Flexibility in:
- type, shape and form of reference material and outcomes of self-assessment – no templates

Providing consistency & reducing workload:
- through size of Team & duration of mission
- user friendly self-assessment
- recognition of IRRS (!)

Review Team composition discussed & agreed with the Member State counterpart
Self-assessment questionnaires

- currently for national level reviews: policies, strategies & frameworks

Topics

- Policy and framework
- Strategy
- Inventory
- Concepts, plans and technical solutions
- Safety
- Costs and Financing
- Expertise, training and skills
- Other topics as desired

- others under thorough consideration, recognizing:
  - Variety of needs
  - A few identified trends, due to development of programmes between Member States
Supporting activities

• Workshop for EU Member States to discuss on specific needs relating to 2011/70/EURATOM Directive:

General summary of comments to the IAEA:
  • Remember to minimize the reviewing burden on current generations (including self-assessment)
  • Double-check and, if necessary – clarify – terminology
  • Consider providing information on avoiding duplications between the two services: IRRS & ARTEMIS
  • Self-assessment welcomed as user-friendly, minor clarifications applied

• Revising in-house completeness and validity of data on experts information – TC, etc.

• Taking experience from IRRS & INIR: preparing experts taking part in the EU MS reviews – a training scheme developed, which may be tuned and applied for other significant identified resource needs
First missions

Four official requests:

As required by the EC Directive 2011/70/EURATOM:
- Poland – preparatory meeting Jan 2017; mission – Oct 2017
- France – preparatory meeting Mar 2017; mission – Nov 2017
- Spain – IRRS and ARTEMIS, missions together in 2018

Specific requests:
- Australia

Considering a review in 2018? This is the right time to place official request!
Path forward

→ Guideline:
  → First draft to be published end of 2016
  → Finalization of version 1.0 draft – early March 2017

→ 10th – 13th April 2017 – workshop for all the IAEA Member States on the ARTEMIS review service

→ Implementation of reviews

→ Specific needs for EU MS reviews – ensuring availability of experts and their familiarity with these reviews, as well as exchange of experience

→ Finalizing the online resources, including restricted areas for individual reviews – ARTEMIS on GNSSN Platform – end of 2016

→ Welcoming subsequent requests from our Member States!

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Headquarters of the IAEA Secretariat in Vienna from 1958 to 1979. The building on Kärntner Ring today is the Grand Hotel. (Photo: IAEA)

Thank you