Agenda Item W 7.2

Report from the 2019 Meeting of the International Radioactive Waste Technical Committee (WATEC)

‒ For information –

Ian Gordon
Section Head, Waste Technology Section
Division of Nuclear Fuel Cycle and Waste Technology (NEFW)
Overview

• Scope of WATEC
  – Radioactive Waste, Decommissioning and Environmental Remediation

• Timing
  – Four-yearly cycle – significant number of new participants started in 2019
  – Alignment of work to the IAEA’s biennial cycle
    • Typically, alternate years are focused on consideration of the draft input to the programme and budget for WTS and DERS

• Sessions, with Recommendations and Observations
SESSION 1 - THE IAEA’s PROGRAMME IN RWM and D&ER AND FOLLOW UP

1. WATEC recommends that the development of proposed activities in WTS/DERS should be further clarified, indicating the approach used to evaluate priorities before the next meeting. This will assist in understanding the rationale behind projects, clarify priorities and enable WATEC to provide better advice for the next budgetary cycle. Visibility of the mid-term strategy will also be of assistance.

2. WATEC encourages continued dialogue within the IAEA Secretariat, to ensure good use of resources, minimal duplication and clear communication to Member States.
An update on the project “Status and Trends in Spent Fuel and Radioactive Waste Management”, along with the associated reporting tool SWIFT (Spent Fuel and Waste Information Tool).

3. WATEC continues its strong encouragement to pursue the work on “Status and Trends” project as a relevant joint effort of the international community to provide an authoritative, reliable and updated source of information for interested parties. WATEC notes also positively that this joint effort leads to mutually agreed upon approaches (for example, in inventory reporting), which has the possibility to reduce the reporting burden upon Member States.

4. WATEC suggests that the “Status and Trends” project may be a suitable platform in which to consider how best to represent the range of factors, at the highest level, which influence decisions on the management strategies for radioactive waste (policy, technical, economic, social, etc). This will help to clarify the rationale for decisions (the ‘why?’, behind the ‘what?’) and help explain the differences and commonalities between various programmes.

5. WATEC requested that the draft report of ‘Status and Trends’ should be distributed to WATEC Members, for information and comment.
SESSION 2 - UPDATE ON INTERNATIONAL ORGANIZATIONS’ ACTIVITIES

6. OBSERVATION - WATEC notes positively the continuing coordination between various international organisations. It also stresses the need for coordinating the various initiatives across different organisations on similar subjects as the pool of available expertise to address the subjects is limited.

7. WATEC welcomes the promotion and opportunity to enhance learning by engaging with organisations outside the nuclear field and recommends strengthening this cooperation. WATEC encourages the Secretariat to further consider practical cooperation pathways with the EDA (European Demolition Association).

8. A further exploration into the factors involved in “exceptional circumstances” relating to entombment is well warranted among WATEC members themselves, taking due account of IAEA Safety Standards. Noting that WATEC members are encouraged to work with their national representatives on the relevant IAEA Safety Committee (Waste Safety Standards Committee, WASSC) to share their views. Due consideration of coordination with OECD-NEA should also be applied.
9. WATEC recommends the capturing of examples which illustrate consideration of optimization of protection and safety to take account of economic and social factors, and of the graded approach, whether in larger or smaller nuclear programmes. Noting the OECD-NEA Workshop, planned for 2019.

10. The IAEA report on disposal options for countries with small inventories of Radioactive Waste should be clear in terms of the description of each option, identifying the characteristics of each option (e.g. maturity, ease of retrievability) and should be clear as to which options have been developed with established examples and which remain at a concept stage with further substantiation required to support their viability. The report should also mention that options for small inventories could also be considered in programmes with larger inventories where small volumes of waste require specific disposal routes.
11. OBSERVATION - WATEC welcomes the continued fostering of dialogue between RWM, Decommissioning and Safeguards with particular emphasis on (i) safeguards by design for disposal facilities, (ii) understanding the potentially contradictory requirements regarding long term safety (passive safety vs. permanent control), (iii) Safeguards implications of retrievability and recoverability requirements, (iv) guidance for smaller programmes, (v) guidance for decommissioning and (vi) measurement needs. Provision of the ASTOR report to WATEC participants will also be considered.
12. WATEC encourages the prompt development of the relevant IAEA publication on the management of radioactive waste from some past practices and encourages parallel consideration of the physical-chemical states of the waste, as well as the radiological aspects.

13. WATEC encourages the Agency to pursue the ongoing reflection within LABONET on an integrated and balanced approach for radiological and physical-chemical characterization of (legacy, existing) waste in view of disposal but in absence of disposal-dedicated WAC and/or absence of disposal-dedicated regulations. Such approach should also encompass suitable flexibility/conservativeness to accommodate new insights, evolution of waste in storage conditions and regulatory evolutions.
14. WATEC encourages the prompt development of the relevant IAEA publication on WAC. Considering the delays in implementing disposal, and therefore the impossibility to fully determine WAC (no host-rock, no site, no EBS-specific WAC) and the extended period for storage, WATEC encourages reflection on the possibility to treat/condition the various waste types while maximising safety (in storage) and flexibility (towards future disposal). Concepts such as interim products, conditioning for storage, robust storage packages and the balance between risks and flexibility, should be further analysed, while fully recognizing the specificities of various waste types (liquids in particular).

15. WATEC recommends further consideration of the terminology (for example, ‘waste from past activities’, ‘legacy’, etc) used and the associated definitions, to provide enhanced clarity.

16. OBSERVATION - WATEC is interested in assessing how lessons learnt from dealing with legacy issues have resulted in changes in current waste management operations (e.g. to ease conditioning approach).
17. OBSERVATION - Recognises that environmental remediation is not limited to uranium legacy sites but relates also to post-accidental situations, contamination by natural processes, and remediation within the scope of decommissioning.

18. WATEC recommends the IAEA to implement an holistic, integrated approach to ER/RWM/Decommissioning, beyond organisational boundaries. In this regard the development of the concept of environmental management should be pursued by the Secretariat
19. WATEC recommends to foster sharing of good practices in the management of contaminated sites with close attention to the "after-care" of the remediation activities with a focus on application of institutional controls, monitoring, and especially on the maintenance of engineered structures.

20. Notes the interest of the forthcoming IAEA Conference on NORM Waste Management (Q4 2020) and encourages the strong engagement of industry outside nuclear applications. WATEC is invited to participate in the conference programme committee.
21. OBSERVATION - WATEC notes positively the contribution of INIR missions to the early awareness of RWM, SNF Management and Decommissioning when planning/entering a nuclear power programme.

22. WATEC notes the benefits of having approximate estimates (e.g. in % of investment or of electricity costs) of costing of back end activities, for a new NPP programme, and an agreed upon methodology for costing; WATEC suggests that the Agency coordinates internally and with the NEA in order to review existing work, evaluate gaps and, if needed, define potential future initiatives.
Thank you!
WATEC Scope (TOR I)

• The International Radioactive Waste Technical Committee (WATEC) is a working group of senior international experts in radioactive waste management, decommissioning and environmental remediation,

• With particular emphasis on strategies, implementation, technologies and methodologies.

• WATEC advises the Secretariat on programme activities in the relevant field and helps to maintain transversal connectivity with other fields of work in the Agency.

• The development of safety standards is not included, as this is addressed by other IAEA Committees.
WATEC Functions (TOR II)

- a) To provide advice and guidance, and to marshal support in their countries for implementation of the Agency's programmatic activities.
- b) To provide a forum for information and knowledge sharing on national and international programme development;
- c) To act as a link between the Agency’s activities and the national scientific and technical communities, as well as relevant regional and/or international organizations;
- d) To provide advice on preparatory actions in Member States and the Agency’s activities in planning and implementing coordinated research projects, collaborative assessments and other activities as well as the review of the results;
- e) To develop and/or review selected documents from the Nuclear Energy Series, assess existing gaps and advise on preparation of new ones;
- f) To identify important topics for discussion at SAGNE and contribute to status reports, technical meetings and topical conferences in the relevant fields;
- g) To encourage the participation of young professionals, as appropriate, in Agency activities;
- h) To provide input on advice regarding preparatory actions by Member States for planning and implementing relevant activities.
NEFW

Nuclear Fuel Cycle

Research Reactors

Waste Management

Decommissioning

Environmental Remediation
Promote information exchange
Foster technology transfer
Cooperative research
Capacity building in Member States
The 43rd MRS Symposium on
Scientific Basis for Nuclear Waste Management

21–24 October 2019
Vienna International Centre

Symposium proceedings to be published by “MRS Advances”
Special Volume Editors
N.A. Smith and R.A. Robbins

Registration details and Call for Papers will be announced in early 2019
Waste Technology Section

Section Head
Ian Gordon

Predisposal Team Leader
Rebecca Robbins

Source Management Team Leader
Cathleen (Kate) Roughan

Disposal Team Leader
Stefan Mayer

20 IAEA Staff
16 P-Staff (+ 0 vacancy)
4 G-Staff (+0 vacancy)
0 Consultant
0 Interns

CONNECT - link
Waste Technology Section

Predisposal Team
Rebecca Robbins

Marina Tolstenkova

Felicia Dragolici

Merle Lust

Willie Meyer

Nick Smith
Waste Technology Section

Source Management Team
Cathleen (Kate) Roughan

Juan Carlos Benitez Navarro

Mladen Novakovic

Zsuzsanna Zohori

William (Bill) Stewart
Waste Technology Section

Disposal Team
Stefan Mayer

Jiri Faltejsek

Masahiro Tachibana

Gerald Nieder-Westerman

Haeryong Jung

Shelby Elamkunnam

Phillippe Van Marcke
Useful Links

- Wiki: https://idn-wiki.iaea.org/wiki/Main_Page
- Networks: https://nucleus.iaea.org/sites/connect/Pages/default.aspx
- eLearning: https://nucleus.iaea.org/sites/connect-members/LMS/Pages/Module-Mindmap.aspx
- INIS information repository: https://inis.iaea.org/search/

www.iaea.org/ne
A few of the IAEA professional Networks

https://nucleus.iaea.org/sites/connect/Pages/default.aspx
Advanced Reactors & Fuel Cycles – An holistic view, from the start.

Increasing focus to develop IAEA guidance regarding RWM, SNF and Decommissioning considerations during the design phase of new reactors, fuel types and advanced fuel cycles
Our goals and activities: catalysing people to work and share together

- Facilitate cooperation
- Promote good practice
- Training workshop and courses
- Peer review
- Expert missions
- Information and knowledge transfer
- Publications
- Practitioners networks
- Build capacity
- Meetings and conferences
- E-tools
- Publications