



Reliable Nuclear Fuel Services Working Group

Status Report

Report on the Comprehensive Fuel Services

Presented to the IFNEC STEERING GROUP MEETING

By

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IFNEC Steering Group Meeting – Bucharest, Romania,
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Presentation Outline

- 1. CFS history, Objectives of the CFS Discussion Paper and Description of the CFS Concept (Comprehensive Fuel Services)**
- 2. Challenges, Findings & Recommendations**
- 3. Result of the Workshop**
- 4. Way Forward**



CFS history (1/2)

1. The Comprehensive Fuel Services concept has been addressed by several meetings of the Executive Committee meeting:
 - Beijing, China (Oct 2009); Dead sea, Jordan (Nov 2010); Warsaw, Poland (Sept 2011); Marrakech, Morocco (Oct 2012); Abu Dhabi, UAE (Oct.,2013)
2. Warsaw Executive Committee request that a “[discussion paper on the benefits and issues](#) regarding Comprehensive Fuel Services” be prepared and brought to the next Executive Committee meeting.
3. Marrakech (Morocco, Oct 2012) Executive Committee meeting reviewed and approved the Executive Summary of the CFS Discussion Paper and directed two WGs to continue working together on the Discussion Paper. The Discussion Paper was [finalized](#).
4. RNFSWG met on April 16th, 2013 to address the next step for CFS development presented as recommendations in the Discussion Paper.



CFS history (2/2)

- Abu Dhabi (United Arab Emirates (UAE), Oct. 2013)
Executive Committee directed RNFS WG to proceed with holding a CFS **Workshop** to obtain feedback on CFS paper from **both industry and emerging market countries** and to further explore appropriate roles of governments in facilitating international back end nuclear fuel services.
- Also, the Executive Committee directed that RNFS WG should continue to discuss the development of **Model Agreement** approach, and report the outcome of the workshop and subsequent progress at the 2014 Executive Committee Meeting.



Objectives of CFS Discussion Paper

- Development of common understanding of CFS and its key characteristics:
 - *The CFS concept refers to the availability of **commercially-based fuel cycle supplies and services** that provide internationally acceptable assurances of both **new fuel supply** and **used fuel disposal**.*
 - *The essential feature of CFS is to provide **States with options for the management of their fuel cycle**, both front and back-end.*
 - *The existence of options for the back-end that meet international standards will contribute to the effective and safe management and disposal of used fuel.*
- Identification of **the challenges** to delivering global, comprehensive, reliable, and commercially-based **back-end** fuel services.
- Recommendations for addressing those challenges



Workshop on “Developing Options and Pathways for Disposal of Spent Nuclear Fuel and High-Level Waste”

- **May 5th - 7th, 2014** - Romanian Parliament, Bucharest, Romania
- Organized by the IFNEC Reliable Nuclear Fuel Services Working Group
- Hosted by Romanian **Nuclear Agency & Radioactive Waste (AN&DR)**
- 60 attendees from 16 countries
- Australia, Austria, Belgium, Bulgaria, Egypt, France, Italy, Japan, Kenya, Poland, Rep of Korea, Romania, Slovenia, Switzerland, UK, US



Agenda of the Workshop

- Session 1: The Need for Final Waste Management Capabilities and the Role of Social Contract Issues in the Development of Disposal Options
- Session 2: What is needed for Final Waste Management Capabilities and Disposal Options to develop? - Moderated Panel Discussion
- Session 3: RNFSWG Past Activities Addressing Disposal Options
- Session 4: Industry Interest in the Development of Final Waste Options and Discussion on What is Needed for their Involvement,
 - Industry presentations
 - Nuclear Energy Institute
 - AREVA
 - Toshiba Corporation
 - International Nuclear Services
 - Nuclearelectrica SA
 - Moderated Panel Discussion on:
- RNFSWG meeting



Output of RNFSWG Workshop (1/3)

1. For several reasons, including safety, security and economics, the concept of a multinational repository merits attention in international forums such as IFNEC. IFNEC can contribute to the **maturation** of this concept through activities that include continued work on identifying the issues associated with this concept, and developing an understanding of those issues for interested member countries.
2. The multinational repository concept will clearly benefit from the cumulative experience of existing and on-going national programs. Concerns regarding the impact of this concept on national repository programs has been acknowledged, but those concerns should not be taken so far as to suggest that the development of the concept should **wait for the full completion of one or more national programs**. As a matter of fact, progress on national programs will contribute during the further development of the multinational repository concept.
3. Regarding available experience from national programs there are key points that appear to foster progress toward a disposal solution, including addressing siting issues in a clearly understood process, listening the public to understanding their issues, avoiding making decisions prior to a full and open public dialogue, etc. Nevertheless, it is understood that successful approaches to developing repository programs will depend on **each country's unique relationships between the governments and the public**.



Output of RNFSWG Workshop (2/3)

4. Regarding available standards, a broad array of standards, requirements, guidelines and best practice are available through [IAEA documents and international conventions](#). This body of documents provide the basis for the development of any multinational disposal project and the support and confidence of the international community.
5. The Joint Convention establishes the responsibility a spent fuel producing country would have in a multinational repository project. If the multinational approach is to be supported by all countries, it was acknowledged that this approach has to be based on each party complying with its duty under the Convention.
6. An important objective of the Workshop was to obtain comments from industry on the commercially based back-end fuel services concept discussed in the CFS Discussion Paper. This concept seeks to address the [need of small reactor fleet countries](#) for waste management option, including disposal, with a market driven strategy. Several industrial representatives were invited to present their views: Nuclear Energy Institute, Areva, Toshiba, International Nuclear Services, and Nuclearelectrica SA. The comments stressed;
 - The importance of respecting the respective role and responsibility of governments, agencies and industry, in compliance with the applicable international standards;
 - The comprehensive and mature commercially available solutions and services available to the benefit of government (s) willing to implement national or multinational projects.



Output of RNFSWG Workshop (3/3)

7. The industry commenters expressed support for any multinational project in the spirit of the comprehensive fuel services concept, **with the following understanding:**
- The coupling between front-end and back-end is not considered relevant since the maturity and the specification of the two activities are quite different.
 - Even if industry can contribute significantly in different areas and at different moment in the development of a multinational repository project, the industry does not consider this an undertaking in which they can in any way take a lead role. The primary responsibilities for any initiatives are clearly on the side of governments. If governments undertake a multinational initiative, they can expect the appropriate support of industry.
8. As a summary,
- There is a consensus on the importance of considering multinational approaches to addressing spent fuel disposal issues at some point in the future. On-going initiatives within the international community directed at developing dialogues on this concept can contribute to its maturity. Forums like IFNEC, by bringing together nuclear power country representatives, can promote the understanding and development of the multinational approach.
 - One can define the comprehensive fuel services as a way that invites the industry to offer services at all stages and covers a broad scope of activities for a disposal project, national or multinational. However it must be kept in mind that spent fuel ownership responsibilities will ultimately rest with the governments. Of utmost importance is the help that can provide industry to governments as multinational repository ideas are considered.
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Path Forward

- In consideration of the information received at the Workshop, the RNFSWG will review the CFS Discussion Paper and **provide an update**.
- This work will be closely coordinated with interested IFNEC member **countries and in particular countries with** small nuclear programs.
- This update will be presented at the next Executive Committee in October meeting along with proposed next steps.



Thank you for your Attention!

Organizing committee

- Alan Brownstein, DOE, US;
- Alice Dima, AN&DR, Romania;
- Daniel Iracane, CEA, France;
- Philippe Montarnal, CEA, France;
- Kazuhiro Suzuki, IRID, Japan