



International Co-Operation in
Fuel-Cycle Activities,
Including the International
Framework for Nuclear Energy
Cooperation (IFNEC)

Session 95 - Panel Discussion

March 18, 2015

Waste Management 2015

IFNEC MEMBERS



Participants

1. Argentina
2. Armenia
3. Australia
4. Bahrain
5. Bulgaria
6. Canada
7. China
8. Estonia
9. France
10. Germany
11. Ghana
12. Hungary
13. Italy
14. Japan
15. Jordan
16. Kazakhstan
17. Kenya
18. Republic of Korea
19. Kuwait
20. Lithuania
21. Morocco
22. Netherlands
23. Niger
24. Oman
25. Poland
26. Romania
27. Russia
28. Senegal
29. Slovenia
30. Ukraine
31. U.A.E.
32. U.K.
33. U.S.

Observer Organizations

1. International Atomic Energy Agency (IAEA)
2. Generation IV International Forum (GIF)
3. Euratom
4. Organisation for Economic Co-operation and Development (OECD)/Nuclear Energy Agency (NEA)

Observer Countries

1. Algeria
2. Bangladesh
3. Belgium
4. Brazil
5. Chile
6. Czech Republic
7. Egypt
8. Finland
9. Georgia
10. Greece
11. Indonesia
12. Latvia
13. Malaysia
14. Mexico
15. Moldova
16. Mongolia
17. Nigeria
18. Philippines
19. Qatar
20. Saudi Arabia
21. Singapore
22. Slovakia
23. South Africa
24. Spain
25. Sweden
26. Switzerland
27. Tanzania
28. Tunisia
29. Turkey
30. Uganda
31. Vietnam

Participant Countries



Observer Countries



International Observer Organizations



MISSION



- The International Framework for Nuclear Energy Cooperation **provides a forum** for cooperation among participating states **to explore mutually beneficial approaches to ensure the use of nuclear energy** for peaceful purposes **proceeds in a manner** that is **efficient and meets the highest standards of safety, security and non-proliferation.**
- Participating states would not give up any rights and voluntarily engage to share the effort and gain the benefits of economical, peaceful nuclear energy.
- Implemented through meetings and workshops

IFNEC ORGANIZATIONAL STRUCTURE



EXECUTIVE COMMITTEE
Ministerial Level Officials or Designees
EC Chair Rotates Annually

STEERING GROUP
Chair: United States, Ed McGinnis
Vice Chairs: China, Li Ze; France, Frederic Journes; and
Japan, Hironori Nakanishi

Secretariat
Aleshia Duncan,
United States

Infrastructure Development Working Group (IDWG)

Co-Chairs: U.K., John Mathieson;
U.S., Dr. Al Burkart

Reliable Nuclear Fuel Services Working Group (RNFSWG)

Co-Chairs: France, Daniel Iracane;
UAE, Ambassador Hamad
Al Kaabi

PANEL MEMBERS



- **John Mathieson**
 - Head of International Relations, UK NDA
 - Co-chair, reporter
- **Everett Redmond,**
 - Nuclear Energy Institute
 - Co-chair
- **Gérard Bruno**
 - Head Radioactive Waste and Spent Fuel Management Unit,
Dept. Nuclear Safety & Security, IAEA
- **Ed McGinnis**
 - Deputy Assistant Secretary, US DOE/NE
 - Chair IFNEC SG
- **Doug Tonkay**
 - Program Manager, US DOE EM



FORMAT

- Each panelist has 5 minutes to make opening remarks and raise issues.
- Questions will be posed by the moderators for the panel to address as well as expand upon other panelist comments.
- Questions will be taken from audience at the end of each question session.
- Please be mindful of time!

QUESTIONS TO BE ADDRESSED:



- How far can nuclear expand without back-end solutions?
- Can a single international governance regime be created for back-end issues?
- “Extended” Centralized Storage—What are the international options?
- Consent Based Siting—Do international partnerships help or hurt?
- Reprocessing / Recycling vs. Direct Disposal —Does it make a difference for multi-national storage and disposal options?

HOW FAR CAN NUCLEAR EXPAND WITHOUT BACKEND SOLUTIONS?



- Many nations have expressed interest in starting or expanding nuclear energy programs
- Limits to expansion most often cited are safety, non-proliferation and financing
- Lack of backend solutions have caused some INFEC members to defer their interest, while others choose to move forward deferring their solution
- How significant is resolving the backend in limiting the global expansion of nuclear energy?

CAN A SINGLE INTERNATIONAL GOVERNANCE REGIME BE CREATED FOR BACK-END ISSUES?



- Joint Convention for Spent Fuel Safety and Radioactive Waste Safety provides frameworks for good practice and compliant behavior
 - But no sanctions, other than Peer pressure
- INFEC promotes goals for nuclear expansion and reducing barriers for entry into nuclear
- IAEA and NEA seek member support for standards of performance and capability
- Is it possible to create something with enforcement such as *The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* for global trade and disposition of SNF and radioactive waste?

EXTENDED CENTRALIZED STORAGE— WHAT ARE THE INTERNATIONAL OPTIONS?



- The events at Fukushima brought significant attention to fuel pools and dry cask storage
- The abandonment of the US in seeking a high-level waste repository at Yucca Mountain resulted in a Nuclear Regulatory Commission finding for extended storage for 300 years and perhaps more
- Many nations did not consider extended interim storage (greater than 60 years) as part of their fuel cycle management
- Given this sudden shift in policy and approach, does this create the opportunity for an international solution?

CONSENT BASED SITING—DO INTERNATIONAL PARTNERSHIPS HELP/HURT?



- The US Administration has rationalized that future repository siting decisions should be a populist referendum with acceptance from “communities directly affected”
- Other nations have attempted consent based siting with mixed results
- National repository programs in (Sweden, Finland, France) provide only national solutions to SNF/HLW disposal
- For nations using consent based siting, would multi-national partnerships be even possible, or would communities view this as a positive opportunity to develop a global business?

DIRECT DISPOSAL VS. RECYCLING—DOES IT MAKE A DIFFERENCE FOR MULTI-NATIONAL STORAGE/DISPOSAL?



- Reprocessing / recycling:
 - Treatment for purposes of creating more stable waste forms and lower volumes for long-term storage/disposal is often used as a rationale for fuel reprocessing (France, Korea, Russia)
- What is the economic argument of reprocessing over SNF as a storage / disposal wasteform?
- Could reprocessing SNF be an incentive for multi-national storage/disposal facilities?
 - Easier wasteform?

A central image of the Earth, showing continents and oceans, is surrounded by three large, thick, curved arrows forming a circular path. The top arrow is yellow, the bottom-left arrow is green, and the bottom-right arrow is white. The entire graphic is set against a light blue and white background with a subtle starry pattern.

THANK YOU FOR PARTICIPATING!