INPRO Dialogue Forum on
“Multilateral Cooperative Approaches to the Back End of the Nuclear Fuel Cycle”

Session 2:
Transfer of Responsibility Involving Spent Nuclear Fuel Exports

Alan Brownstein, Chair
Director, Office of International Commercial Activities
Office of Nuclear Energy
U.S. Department of Energy
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Session Overview

- When spent fuel is discharged from a reactor it inherently establishes responsibilities for its safe and secure management.

- This session is based on the proposition that further clarity is needed regarding how that responsibility can be acceptably transferred from one country to another for the purpose of geologic disposal.

- The objective of the session is to begin the identification of issues that responsibility transfer present.

- The topic is timely and important since it is likely that over time more situations will arise in the future where agreements will be developed to transfer spent fuel for the purpose of management and disposal.
Most Countries with Nuclear Power will Generate Relatively Small Totals of Spent Fuel

There are over 250,000 MTU of used fuel in storage worldwide.

This used fuel is currently stored temporarily in 33 countries awaiting reprocessing or disposal.

19 countries currently store less than 3,000 MTU
Currently 19 countries are storing small amounts of used fuel. Over 40 countries are embarking, or considering embarking, upon nuclear power programs.

With time, perhaps as many as 60 countries will be storing small amounts of used fuel.
Potential Spent Fuel Disposal Options for Small Fleet Countries

- Develop national disposal capability
  - However, for many countries with small nuclear programs, the appropriate geological conditions for safe disposal may not exist, and the financial, technical, and human resources required for the development, construction, and operation of a disposal facility are not reasonably feasible as well as economically inefficient.

- Participate in a cooperative multinational disposal project
  - Frequently viewed as a regional concept

- Participate in a disposal for fee service
  - Country with developed disposal capability offers disposal service through intergovernmental arrangements and commercial contracts

Options other than national disposal do not exist today; if developed they would involve transferring possession of spent fuel to another country.
Challenges with Spent Fuel Exporting

- Spent fuel management requires clarity and transparency regarding:
  - Title
  - Possession
  - Responsibility

- Information regarding what entity(ies) at any point in time have title and possession of spent fuel assemblies is generally straightforward and publicly available.

- Responsibility transfers are not as straightforward and could range from
  - simple (e.g., all responsibility transfers with title or possession) to
  - a more complex arrangement where only certain responsibilities transfer or can transfer.
Transfer of Responsibility

- Responsibility for spent fuel is governed by both national laws and regulations, international agreements and, for contracting parties, the provisions of the Joint Convention for the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

- Many of the legal and institutional impediments associated with spent fuel management (political, economic, social) are generally understood.

- However, there has been less focus on what is needed to transfer responsibility for spent fuel.

Without further clarity, uncertainties regarding the international acceptability of the transfer of responsibility for spent fuel could become an impediment to multinational cooperation on the back-end options.
Key Question for the Panel

Can a generating country enter into an agreement that transfers full responsibility to the country receiving the spent fuel?

Relevant considerations:

- If yes, what should be the pre-requisites for transferring responsibility?
  - For example, what must the generating county do to assure that the receiving country has the necessary capability to manage the spent fuel?
- If no, what responsibility could not be transferred and why?
  - How would such residual responsibility be managed if possession and control of the spent fuel were transferred to a receiving country? Does the element of time affect the answers to this question?