NRC Participation in the Multinational Design Evaluation Program (MDEP)

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Multinational Design Evaluation Program (MDEP) Public Meeting

- Purpose of this public meeting
  - To provide information to stakeholders about the various on-going activities in the MDEP
- Category 2
  - The public is invited to participate in this meeting by discussing regulatory issues with the NRC

Agenda

- NRC activities associated with MDEP
  - Background
  - Overview and Structure of Each Stage
  - Expected Benefits for Each Stage
  - Issues Challenges
  - Question and Answer Session

MDEP Background

- Proposed to NRC Commission by former Chairman Diaz with three stages of implementation –July 2005
- U.S. vision of MDEP presented during IAEA General Conference – September 2005
- Refined vision of MDEP presented to Senior Regulators during Senior Regulators Conference – Moscow, February 2006

MDEP Stage 1 Overview

- Approved by Commission – Sept. 2005
- Enhanced international cooperation within existing regulatory frameworks and bilateral agreements
- Currently focused on the AREVA EPR
- Other applications of MDEP Stage 1 will be evaluated on a case-by-case basis

MDEP Stage 1 Structure

- Memoranda of Cooperation signed with French (ASN) and Finnish (STUK) Regulators – June 2006
- On-going interactions with technical/regulatory counterparts in Finland and France
  - NRC staff met with counterparts to discuss regulatory/technical issues – Sept. 2006
  - Technical meetings to continue throughout the pre-application and design certification review. Next meeting in Paris in Spring 2007.
  - NRC participating on the French Standing Group of Experts on the EPR (analogous to ACRS)

Cooperation on EPR Design Reviews

- NRC and STUK personnel have initially identified the following technical areas in which closer cooperation would be pursued as part of MDEP Stage 1:
  - Main control room design
  - Technical Specifications
  - PRA
  - Severe Accidents Evaluation
  - Digital Instrumentation and Controls
  - Outage Management Issues (Mid-loop operation)
  - Construction Inspection

Stage 1 Cooperation on EPR Design Reviews

- Review areas chosen based upon the similarity of designs and regulatory requirements/guidance
- STUK is sharing information provided by their licensee (TVO) with the NRC under Memorandum of Cooperation
  - NRC is currently reviewing information relative to the main control room design and technical specifications
- NRC will review and provide feedback to STUK who will use the information as they deem appropriate
- It is anticipated that STUK will provide reciprocal support during NRC review of U.S. EPR
- The NRC remains solely responsible for determination of the safety of reactors within the U.S. as does STUK in Finland and ASN in France

Benefits of Stage 1 Cooperation

- Early identification of important technical issues
- Increased regulatory efficiency through leveraging of technical reviews
- Enhanced safety through cooperation of international safety experts
- Sets the stage for enhanced post-licensing international cooperation
- Insights for Stage 2 activities

MDEP Stage 2 Overview

- Expansion of the MDEP concept to further cooperation among regulators with respect to the regulatory activities associated with the design of new reactors
- Each national regulatory authority will retain sovereign responsibility for reactor licensing in their respective country
- U.K., France, Finland, China, South Korea, Japan, South Africa, Russia, Canada, and U.S. participating

MDEP Stage 2 Structure

- Terms of Reference Endorsed – Sept 2006
  - Policy group consisting of chief regulators – Andre Lacoste, Chair
  - Steering Committee consisting of senior managers – Gary Holahan, Chair
  - Working Groups consisting of technical experts
- Initiation of one year pilot program
- NEA acting as secretariat
- IAEA participating

MDEP Stage 2, Phase One, Pilot Program

- Will assess the similarities and differences in the regulatory requirements (including safety goals) and regulatory practices in several areas
  - Emergency Core Cooling System Performance
  - Severe Accidents
  - Digital Instrumentation and Control

- Will assess the similarities and differences in the regulatory requirements and regulator practices associated with the manufacture of Class 1 mechanical components (pumps, valves, piping, pressure vessels)

MDEP Stage 2, Phase 2

- Will take recommendations from pilot program and pursue additional areas for convergence/cooperation
- Anticipated to be a multi-year, ongoing effort

MDEP Stage 2 Benefits

- Enhanced understanding among regulators with regard to the basis for differences in regulatory approaches
- Enhanced cooperation on safety issue identification and resolution
- Improved efficiencies in the regulatory design review process
- Standardization of regulatory design and manufacturing requirements should be beneficial to the nuclear industry
- Convergence efforts should further stakeholder understanding of the regulatory design review process on an international basis

MDEP Stage 3

- Stage 3
  - Utilize Stage 2 output to facilitate the licensing reviews of Generation IV reactors and other nearer term reactor designs
  - Enhanced standardization and multinational acceptance of regulatory safety reviews

Issues/Challenges

- Need to consider wide range of stakeholder inputs
  - Codes and standards committees
  - Manufacturers
  - Architect Engineers
  - Licensees/Utilities
  - Other Govt. Entities
  - Public
- Need to maintain balanced approach to safety and not default to lowest or highest common denominator
- Need to maintain understanding of each country's unique logistical challenges associated with making changes to its regulatory practices and requirements (legal, legislative, judicial processes)

Questions?

- Gary Holahan, Deputy Director, Office of New Reactors (NRO)
- Jeffrey Jacobson, OIP
- Larry Burkhart, NRO/DNRL