

COMMISSION MEETING SLIDES/EXHIBITS

BRIEFING ON NRC INTERNATIONAL ACTIVITIES

TUESDAY, AUGUST 14, 2001

NRC International Activities



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Director

International Programs

August 14, 2001

NRC International Activities

- Non-Proliferation Support
- Information Exchange
- Safety and Safeguards Assistance
- Cooperative Safety Research

Export Activities

- 118 Licensing Actions
 - 20 Executive Branch Consultations
 - 9 Commission Referral Cases

Bilateral Cooperation

- Convergence of Realistic Goals
- Cost-Effectiveness
- Transparency
- Applicability
- Topicality
- Consistency

International Assignments

- 7 Assignees from 7 Countries
France, Japan, Philippines, South Korea, Switzerland, Turkey, United Kingdom
- 2 Senior NRC Assignees to Switzerland and France

International Visits to NRC

- 100 Visits
 - 30 Commission-level Visits
 - 70 Staff-level Visits
- 25 Countries, IAEA, NEA

NEA Participation

- Benefit from NRC Leadership
- Programs of Primary Interest
 - Reactor Safety Research
 - Reactor Regulation
 - Waste Management
 - Radiological Protection
 - Fuel Cycle Safety

Current NEA Topics

- Maintaining Competence and Research Capabilities
- Regulatory Effectiveness
- Public Communications
- Stakeholder Confidence in Radioactive Waste Disposal
- Monitoring and Data Management Strategies for Radiological Emergencies
- Aging & Decommissioning
- Safety of Geologic Disposal

NRC Participation in IAEA Safety Missions

Mission Type	Countries
OSART (Operational Safety)	Czech Republic, Hungary
IRRT (Regulatory Review)	Mexico, Czech Republic, Lithuania, Ukraine
IPPAS (Physical Protection)	Lithuania

Current IAEA Topics

- Standards, Codes and Guides
 - Power Reactor Safety
 - International Transportation
 - Radioactive Contamination/Clearance
- Safety and Security of Radioactive Sources
- Research Reactor Safety
- Waste Management Safety
- Physical Protection of Nuclear Materials
- Integrated Safeguards

International Conventions

- Nuclear Safety
- Spent Fuel & Waste Management
- Early Notification of a Nuclear Accident
- Emergency Assistance
- Physical Protection
- Liability

FSU Assistance

- High-Risk Reactor Closure & Extension
- Ukraine
- Funding

Commission Expectations

- Clear Rationale for International Interactions
- Commission Notifications
- Development of Agency Positions
- Improved Trip Reports

Enhanced Communications

- With Commission and EDO
- Among Offices
- Within Staff
- Between Agencies

Future Challenges

- DPRK Safety Cooperation
- Russia - Reactor Life Extension
- Non-LWR Technology
- IAEA Safeguards Implementation
- India/Pakistan - Potential Safety Cooperation
- Safety & Acceptance of Waste Disposal

Nuclear Regulatory Research International Activities



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Value of International Cooperation

- Efficient Use of Resources – Leveraging
- Maintain Critical Research Infrastructure (Facilities/Expertise)
- Sharing of Research Experience and Expertise
- Enhance International Understanding

International Cooperation

- Approx. 88 Agreements with 25 Countries
- RES Actively Participates in OECD, UN and IAEA Committees and Working Groups

Scope of Cooperative Research Areas

- Severe Accidents
- Containment
- Seismic
- Nuclear Fuels
- Human Factors
- Digital I&C
- PRA
- S/G
- Thermal-Hydraulics
- Irradiation Assisted
Stress Corrosion
Cracking
- Aging
- Deregulation
- Health Effects
- Waste Management

Examples of Outcomes

- **CAMP Program**
 - Improved RELAP5 Code Supports Risk-Informed Changes to PTS and LOCA Regulations
- **Environmental Effects Program**
 - Data Helped Evaluate Pipe Cracks and CRDM Cracking
- **Int'l Group on Radiation Damage Mechanisms**
 - Data Contributed Basis for RG 1.99 (Rev. 3)
- **CABRI and Halden Fuels Program**
 - Data Helped Update Fuel Codes for High Burnup
- **CSARP Program**
 - Improved MELCOR Code Supports Risk-Informed Changes to Combustible Gas Control Regulation

Outlook

- Maintain OECD/NEA and IAEA Participation
 - Global Issues
 - Cost Sharing
 - Networking

Outlook

- Expand Cooperation (Examples)
 - Next Generation Designs and New Technologies
 - Aging Management Strategies
 - Digital I&C
 - Spent Fuel Storage and Transportation
 - Risk-Informed Decision Making

Major Challenges

- CSNI Identified Concerns
 - OECD/NEA Report: On Loss of Facilities and Expertise
 - Nuclear Education Opportunities
- Research Needs for Advanced Reactors
 - Needs vs. Time and Resources
 - Facilities and Expertise
- Enhancing Cooperation Among International Organizations

Nuclear Reactor Regulation International Activities



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NRR Role & Activities

- Strategic Goal: Support U.S. Interests in the Safe and Secure Use of Nuclear Materials and in Nuclear Non-Proliferation
- Add Value Through the Exchange of International Nuclear Safety Regulatory Experience and Information
- Investments (Resources) and Potential Outcomes Screened Through Four Outcome Goals and the Budget

NRR Topics

- Focused Bilateral Technical Exchanges
- Multilateral Working Groups and Committees
- Focused Program Areas
- International Assignees

Focused Bilateral Technical Exchanges

- France
- Japan
- United Kingdom
- Switzerland
- Finland
- Taiwan
- South Korea
- China
- Spain
- Canada

Multilateral Missions, Working Groups & Committees

- IAEA
 - Missions, CNS Report
- NEA
 - Committee on Nuclear Regulatory Activities (CNRA)

CNRA

- Improving Nuclear Regulatory Effectiveness *
- Regulatory Challenges Arising from Competition in Electricity Markets
- Role of Regulation in Promoting and Evaluating Safety Culture *
- Regulatory Response Strategies for Safety Culture Problems *

* Published Document

Focused Program Areas

- **Regulatory Self-Assessment**
 - U.K., Switzerland, Canada
- **Technical Manager to Switzerland**
 - PBPM, IRRT, Power Uprates, PSA Quality, Risk-Informed Decision Making

Focused Program Areas

- Regulation of Advanced Reactors
 - China – PBMR; Taiwan – ABWR;
 - United Kingdom - HTGR, AP1000
- NRC Reactor Oversight Program
 - IAEA, NEA
- Convention on Nuclear Safety (IAEA)

International Assignees

Country	Mos.	Work Area
France	12	Digital I&C (SRP)
Japan	14	Reactor Oversight, Program, License Renewal
S. Korea	4	Health Physics
Philippines	9	Research Reactor Licensing
Turkey	12	LBLOCA, Analyses, Power Uprates
United Kingdom	9	10 CFR 52, Pre-application, Review of Westinghouse AP1000

Nuclear Material Safety and Safeguards International Activities



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August 14, 2001

Safe and Secure Use of Nuclear Materials

- **NMSS Objectives:**
 - Fulfill International Obligations
 - Support Export Licensing for Nuclear Materials and Equipment
 - Exchange and Use Safety and Safeguards Information
 - Encourage Appropriate Standards, Policies and Practices

International Obligations

- Accomplishments:
 - U.S. - IAEA Safeguards Agreement
 - International Transportation Standards
 - Agreements for Cooperation

Information Exchange

- Accomplishments:
 - Panama Medical Exposures
 - High-Level Waste Storage & Disposal
 - MOX Fuel Fabrication
 - Radiation Events Database
 - Threat Assessment and Safeguards Risk Assessment
 - FSU Safeguards Support

International Standards, Policies & Procedures

- Accomplishments:
 - Disposal of Long-Term Solid Radioactive Waste
 - Clearance Standards
 - Control of Radioactive Sources
 - Safety Requirements for Fuel Cycle Facilities
 - Physical Protection Convention
 - IAEA Safeguards Policies and Approaches

Abbreviations and Acronyms:

ABWR	Advanced Boiling Water Reactor
AP1000	Advanced Pressurized Water Reactor
CABRI	Research Reactor in France, Home of the NEA's Water Loop Project
CAMP	Code Applications and Maintenance Program
CNRA	Committee on Nuclear Regulatory Activities (NEA)
CNS	Convention on Nuclear Safety
CRDM	Control Rod Drive Mechanism
CSARP	Cooperative Severe Accident Research Program
CSNI	Committee on the Safety of Nuclear Installations (NEA)
DPRK	Democratic People's Republic of Korea (North Korea)
EDO	Executive Director of Operations
FSU	Former Soviet Union
HTGR	High Temperature Gas-Cooled Reactor
I&C	Instrumentation and Control
IAEA	International Atomic Energy Agency
IPPAS	International Physical Protection Advisory Service
IRRT	International Regulatory Review Team (IAEA)
LOCA	Loss of Coolant Accident
LWR	Light Water Reactor
MELCOR	Severe Accident Analytical Code

Abbreviations and Acronyms (continued):

MOX	Mixed-Oxide Fuel
NEA	Nuclear Energy Agency (OECD)
NMSS	Office of Nuclear Material Safety and Safeguards
NRC	Office of Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
OECD	Organization for Economic Co-operation and Development
OSART	Operational Safety Review Team
PBMR	Pebble Bed Modular Reactor
PBPM	Planning, Budgeting and Performance Management
PRA	Probabilistic Risk Assessment
PSA	Probabilistic Safety Assessment
PTS	Pressurized Thermal Shock
RELAP5	Thermal-Hydraulic Analysis Code
RES	Office of Nuclear Regulatory Research
RG	Regulatory Guide
S/G	Steam Generator
SRP	Standard Review Plan
U.S.	United States
UN	United Nations