



Future Cooperation in Proactive Materials R&D Programs

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Suggested Approach to Cooperation

- NRC reviews and comments on the knowledge gaps and industry priorities identified in the BWR and PWR Issue Management Tables and works with industry to establish joint priorities
 - This will allow leveraging of NRC and industry funds and will avoid the possibility of developing completely independent (and possibly divergent) R&D programs
- The Office of Nuclear Regulatory Research and EPRI cooperatively undertake the proactive R&D needed, starting with the highest priority projects

Why EPRI?

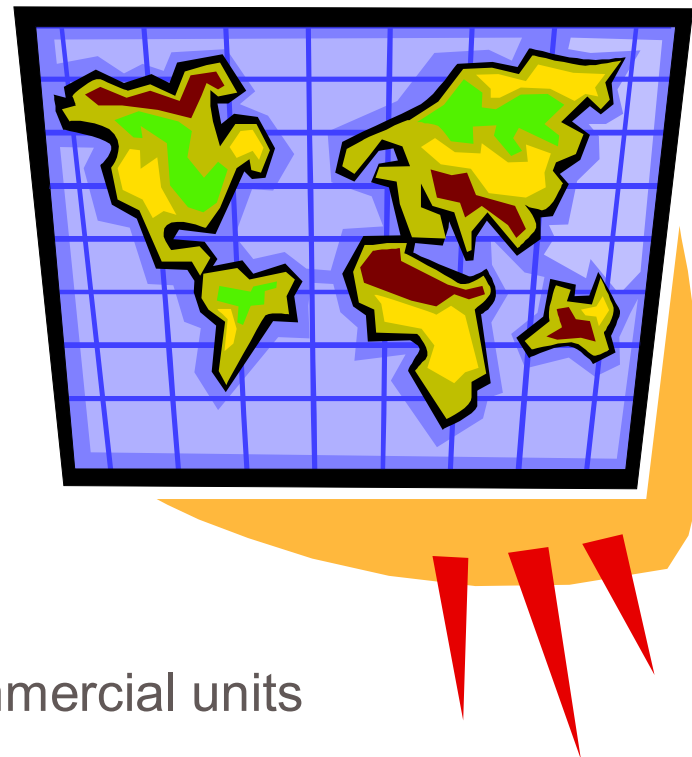
- EPRI manages almost all of the U.S. nuclear industry's proactive R&D on materials degradation
- Most of the world's nuclear licensees already participate in the EPRI-managed materials degradation programs that are pertinent to their plants
- A mechanism already exists for the Office of Nuclear Regulatory Research and EPRI to cooperate on R&D projects of mutual interest

Materials Initiative Issue Programs

- Programs Governed by the Materials Initiative:
 - BWRVIP
 - MRP
 - SGMP
 - FRP
 - NDE and PDI Programs
 - Water Chemistry Control Program
 - Corrosion Research Program
 - NSSS OG Materials Programs

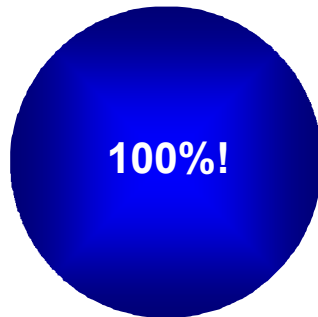
EPRI Nuclear Program Participants

- Full Member Participation includes >200 units:
 - 58 Framatome PWRs
 - 53 GE/H/T BWRs
 - 47 Westinghouse PWRs
 - 21 AECL PHWRs (CANDU)
 - 16 C-E PWRs
 - 7 B&W PWRs
 - 1 KWU PWR
- Supplemental Program Participation
 - >75% of the world's 441 operating commercial units

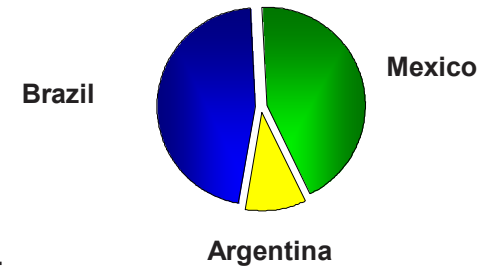


EPRI Worldwide Membership & Participation

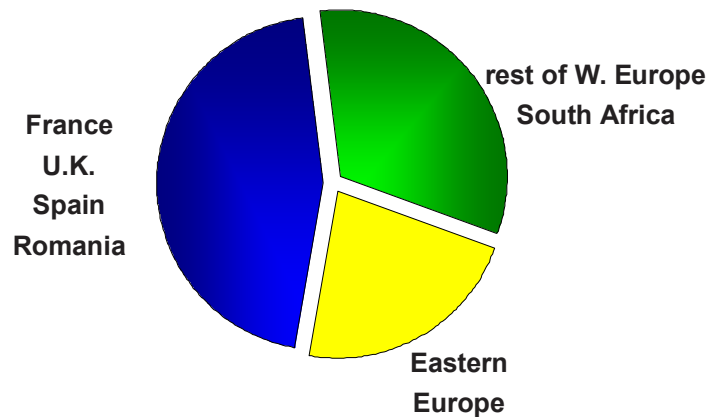
**U.S. & Canada
(115 GWe)**



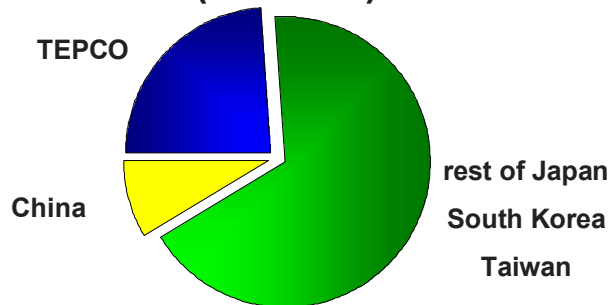
**Latin America
(4 GWe)**



**Europe & Africa
(140 GWe)**



**Asia
(70 GWe)**



**Other
(37 GWe)**



Blue = Full Member
Green = Program Participants
Yellow = no engagement

BWRVIP Member Utilities

U. S. (13 utilities, 34 units)

- **Constellation Nuclear, Nine Mile Point LLC**
- **DTE Energy**
- **Energy Northwest**
- **Entergy**
- **Exelon**
- **FirstEnergy**
- **Nebraska Public Power District**
- **Nuclear Management Co.**
- **PPL Susquehanna, LLC**
- **Progress Energy**
- **PSEG Nuclear**
- **Southern Nuclear Company**
- **Tennessee Valley Authority**

International (12 utilities, 44 units)

- **BKW FMB Energie AG – Switzerland**
- **Chubu Electric Power Company - Japan**
- **Chugoku Electric Power Company - Japan**
- **Comision Federal de Electricidad - Mexico**
- **Forsmarks Kraftgrupp AB - Sweden**
- **Iberdrola Generation - Spain**
- **Japan Atomic Power Company – Japan**
- **Kernkraftwerk Leibstadt – Switzerland**
- **OKG Aktiebolag - Sweden**
- **Taiwan Power Company - Taiwan**
- **Tohoku Electric Power Company - Japan**
- **Tokyo Electric Power Company - Japan**

Existing Cooperation Mechanism

- A memorandum of understanding (MOU) between the Office of Nuclear Regulatory Research and EPRI on Cooperative Nuclear Safety Research was signed in October 1997
- The MOU defines the principles of cooperation between the parties and specific projects are defined in separate addenda
 - Management review meetings of all active projects (and new opportunities) are held at least annually
- This mechanism has worked well and the MOU has been extended at least twice since 1997