



Progress of the United States Foreign Research Reactor Spent Nuclear Fuel Acceptance Program

Reduced Enrichment for Research and Test Reactors Conference 2002
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Presentation Outline

- ★ Review Program Policy
- ★ Receipt program accomplishments to date
- ★ Shipment implementation issues
- ★ Recent changes in the Program
- ★ Current Issues/Planned Shipments
- ★ Summary
- ★ Program points-of-contact
- ★ Questions



U.S. Research Reactor Spent Nuclear Fuel Acceptance Policy

- ★ Research reactor SNF containing uranium enriched in the U.S. will be accepted from 41 countries identified in the EIS and managed in the U.S.
 - About 20 metric tons (5 tons of HEU)
 - Includes aluminum-based and TRIGA research reactor spent fuel and target material
 - Response to 2000 cable indicates participation estimates will be considerably lower
- ★ 10-year acceptance policy (May 13, 1996 to May 13, 2006)
 - Provides time for reactor operators to develop own solutions
 - Fuel irradiated during the 10-year window will be accepted over a 13-year period

U.S. Provided Enriched Uranium to 41 Countries



Reason for the Policy

- ★ Reduce the threat of nuclear weapons proliferation while enjoying the benefits of nuclear technology.
- ★ Reduce, and eventually eliminate, high enriched uranium from worldwide commerce.
- ★ Allow time for the countries with spent fuel to resolve their own path for disposition of this material.

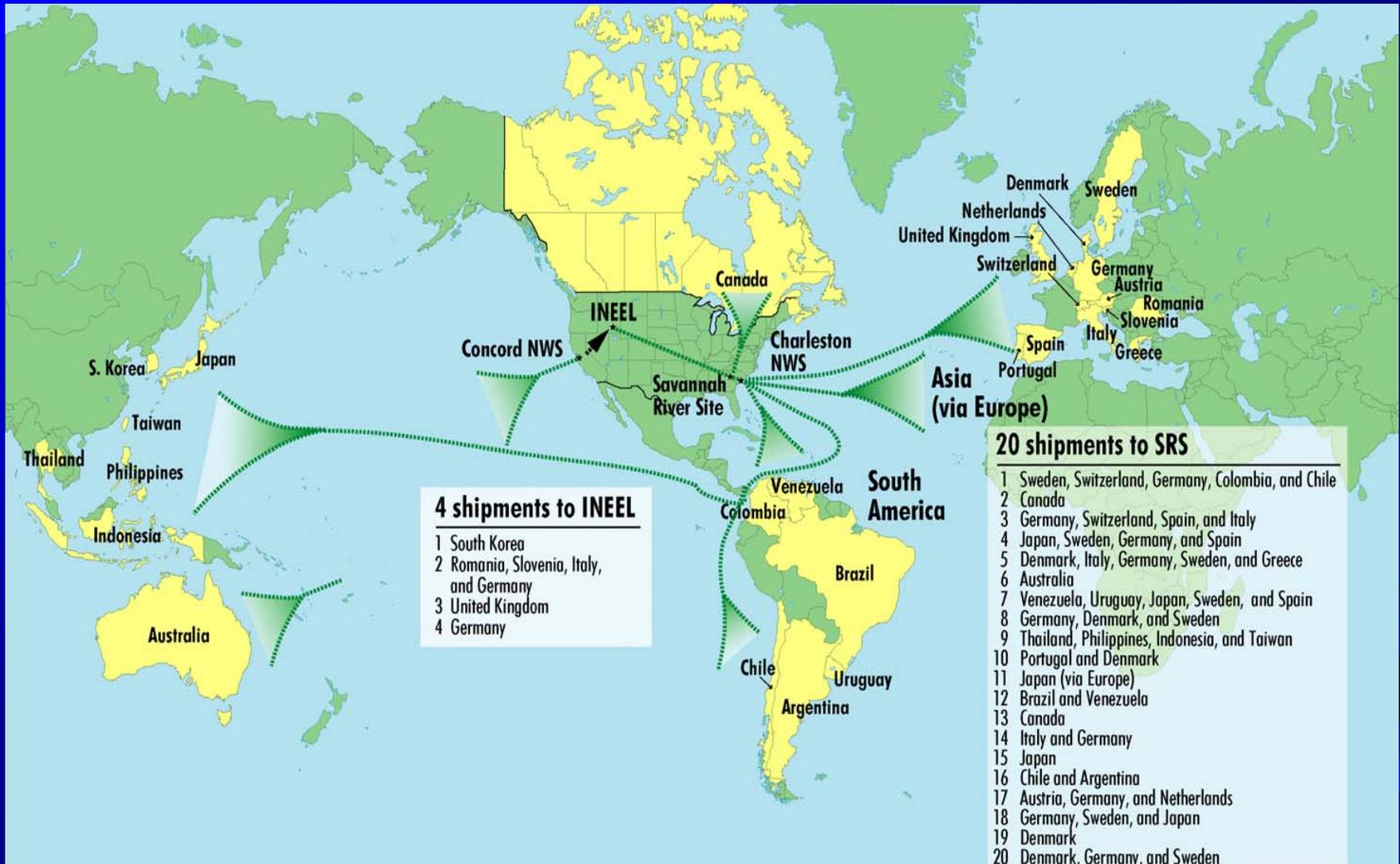


Receipt Program Accomplishments to Date

- ★ Sixth year of program implementation
- ★ 25 shipments completed
 - Spent nuclear fuel shipped from Asia, South America, Australia, North America, and Europe
 - 5,537 spent fuel assemblies from 27 countries have been shipped to U.S.
- ★ 131 casks/4,576 assemblies to SRS, 12 casks/961 assemblies to INEEL
- ★ Based on revised anticipated receipts
 - MTR is 54% complete
 - TRIGA is 68% complete

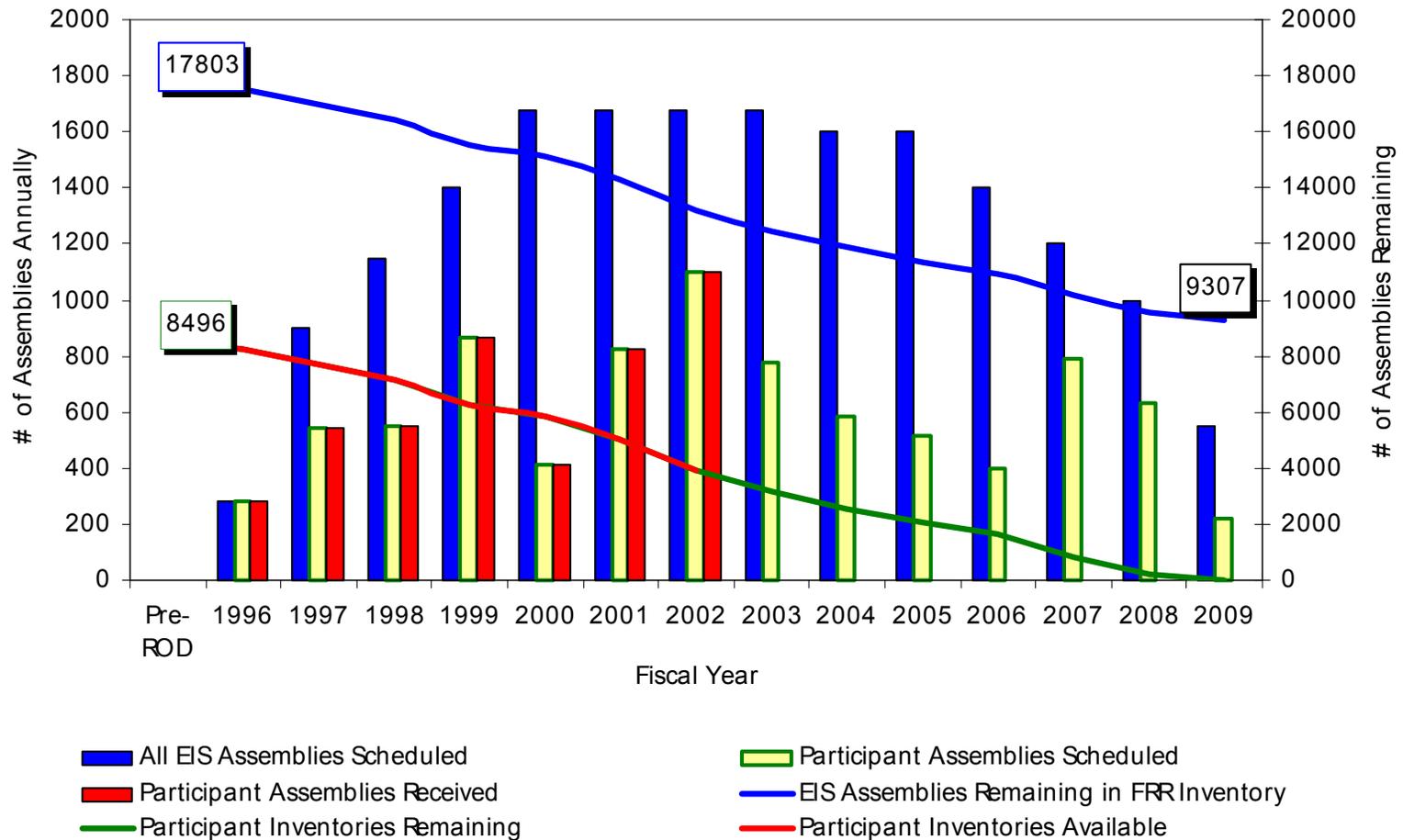


Spent Nuclear Fuel Shipments to Date



2002 Update

SRS FRR SNF Receipt Projections and Actuals



Recent Accomplishments

- ★ September 2001-2002 saw 4 shipments safely completed
- ★ All 4 were MTR shipments to SRS; no TRIGA receipts during this period
- ★ Expecting a TRIGA shipment in Spring '03 and these generally bring a certain level of interest from the States
- ★ Approximately 1 cross-country shipment per year is expected to occur



Shipment Implementation Issues

★ Cask certifications

- U.S. process very structured
- Appendix A submittals: as early as possible
- Early identification/selection of cask

★ Economic, timely shipments

- Becoming more difficult to schedule
- Projected increase in shipments at the end of the program



Implementation Issues (Cont'd)

★ General schedule

- Summer shipment from Europe
- Early fall shipment from Japan via Europe (with European casks if desired)
- One additional shipment annually other than Europe (from an other than high income country)

★ Extensive transportation and institutional planning in the U.S. required even before September 11 attacks



Implementation Issues: Package Reviews

- ★ Licensing of casks and related timing of applications are critically important
- ★ New safeguards and preventive measures put in place after September 11th are taxing all federal resources (including NRC)
- ★ More time for review is always appreciated, but package reviews, particularly those involving new or changed configurations, will require full review time to avoid possible delays



Review Schedule reminders

- ★ New designs: 7 month staff review; 3 month response
- ★ Moderately Complex Amendments: 5 month staff review; 2 month response
- ★ (Minor) Amendments: 3 month staff review



Advances Since Start of Program

- ★ July 2000 modification to the 1996 Record of Decision, increasing maximum number of casks on a single vessel from 8 to 16
- ★ Greater availability of casks enabled increase
- ★ Change allows for fewer transits and reduced costs
- ★ First use of policy change: October 2001 shipment included 12 casks, total of 438 elements



Current Issues: Security

- ★ September 11 attacks radically changed how security concerns are identified and addressed
- ★ DOE has been working with international, federal, State, Tribal, and local authorities to re-examine shipment procedures and requirements
- ★ Temporary halts of radioactive materials shipments occurred twice after the 2001 terrorist attacks
- ★ Threat assessments for shipments have been conducted by federal and state law enforcement
- ★ Closer international coordination (overlap in agency jurisdiction to avoid gaps)



Security (Cont'd)

- ★ Historically, SNF shipments had not been considered attractive targets for terrorist attack
- ★ However, fuel shipments are a matter of high concern because of risk perception as compared to other hazardous materials
- ★ Inspection, escort, and other law enforcement procedures also tax law enforcement and emergency response assets that could be deployed elsewhere



Current Issues: Yucca Mountain

- ★ Progress on developing a geologic repository for spent fuel - Yucca Mountain - is moving forward
- ★ Transportation is emerging as a key area of public interest and debate
- ★ Controversy surrounds future shipments to a repository, but current shipments are becoming more visible and prone to criticism by media/antinuclear organizations
- ★ FRR SNF Acceptance Program monitors these situations closely
- ★ And other countries are watching closely due to possible interest in regional repositories (Canada, Russia, Latin American countries)



Shipments Planned

September 2002 - September 2003 (tentative)



Summary

- ★ FRR SNF Acceptance Program is actively working with research reactors to accept eligible material before the Acceptance Policy proper expires in 2006
- ★ Reactors/governments wishing to participate should contact us immediately if they have not done so already
- ★ Program operations are changing to adapt to new challenges
- ★ We continue to promote the importance of this Program to senior management in the Department of Energy



Program Points-of-Contact

★ Foreign Fuel Receipts

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