Integrated Used Fuel Management Strategy

A New Strategy for the Disposition of the Nation's Used Commercial Nuclear Fuel

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- The Used Nuclear Fuel Problem needs to be Solved to Sustain and Expand Nuclear Energy.

- Energy Solutions proposed in its September 2009 report how to address the nation's used fuel management challenges in an integrated technological and socially acceptable manner.

Energy Situation

- Global and National Energy and Environmental Issues Drive Toward Continued and Expanded Commercial Nuclear Energy
- Disposition of Reactor Used Nuclear Fuel is an Issue that Must be Satisfactorily Resolved to Sustain and Expand Nuclear Energy
- Currently US Used Nuclear Fuel Policy is in a Major Transition and a new commercial based approach is the best path forward.

Nuclear Fuel Background

- Current 104 US Power Reactors with 64,000 MTU in wet and dry storage at 63 operating sites and 10 shutdown sites.
- The DOE is obligated to take their fuel starting 12 years ago.
- Utilities are currently paying $780M/yr with a Nuclear Waste Fund Balance of $24B . Delay damages are ~$12B and growing at $500M/yr.
- DOE has no current path forward since Yucca Mountain was terminated

Phased Development Approach

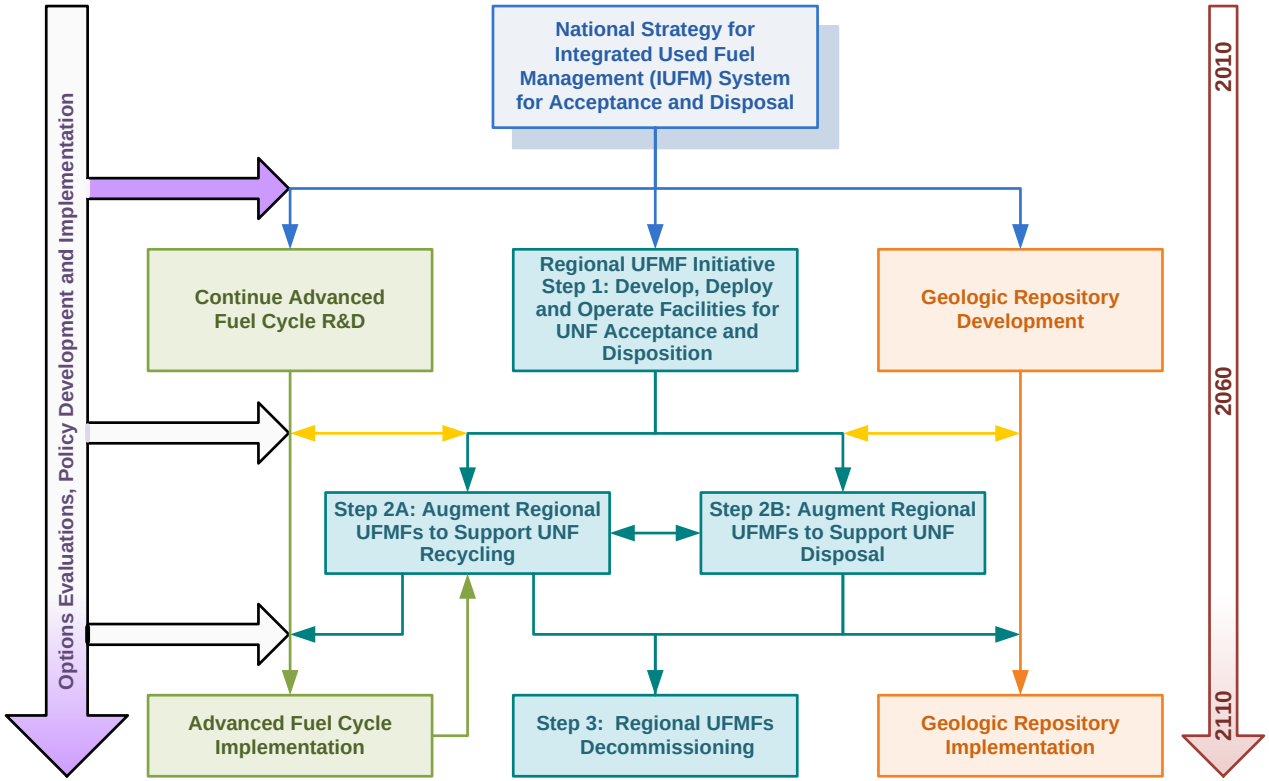
Building Upon the Past and Performing For the Future With a State Partnership

- Starts with lessons learned from past experiences.
- Includes a balance of technology, social concerns, economics, and politics.
- Builds upon existing progress
- Evolves to Address National Needs
- Capable of Meeting International Needs

Integrated Used Fuel Management

- Any future operational alternative geologic disposal site is many decades away.
- Used Nuclear Fuel (UNF) disposition remains a Federal commitment and there are significant legal, political, economic , regulatory and social drivers for Federal progress toward addressing their UNF obligations and to support new reactor development within the next few years
- Although advanced nuclear technologies, e.g. recycling, are desirable, significant uncertainties remain on the timing of large scale facilities. Production sized facilities are realistically many decades away.
- Regional or Centralized "Bridging" Integrated Used Fuel Management Facilities (UFMF) that begin operation as interim storage facilities and are capable of evolving into advanced technology facilities are needed to relieve pressure on operating reactors, remove the 4,000MTU of fuel at permanently shutdown reactors, and to restore public confidence that waste from nuclear energy will be responsibly managed.

An Integration of Storage, Advanced Technology Recycling & Disposal



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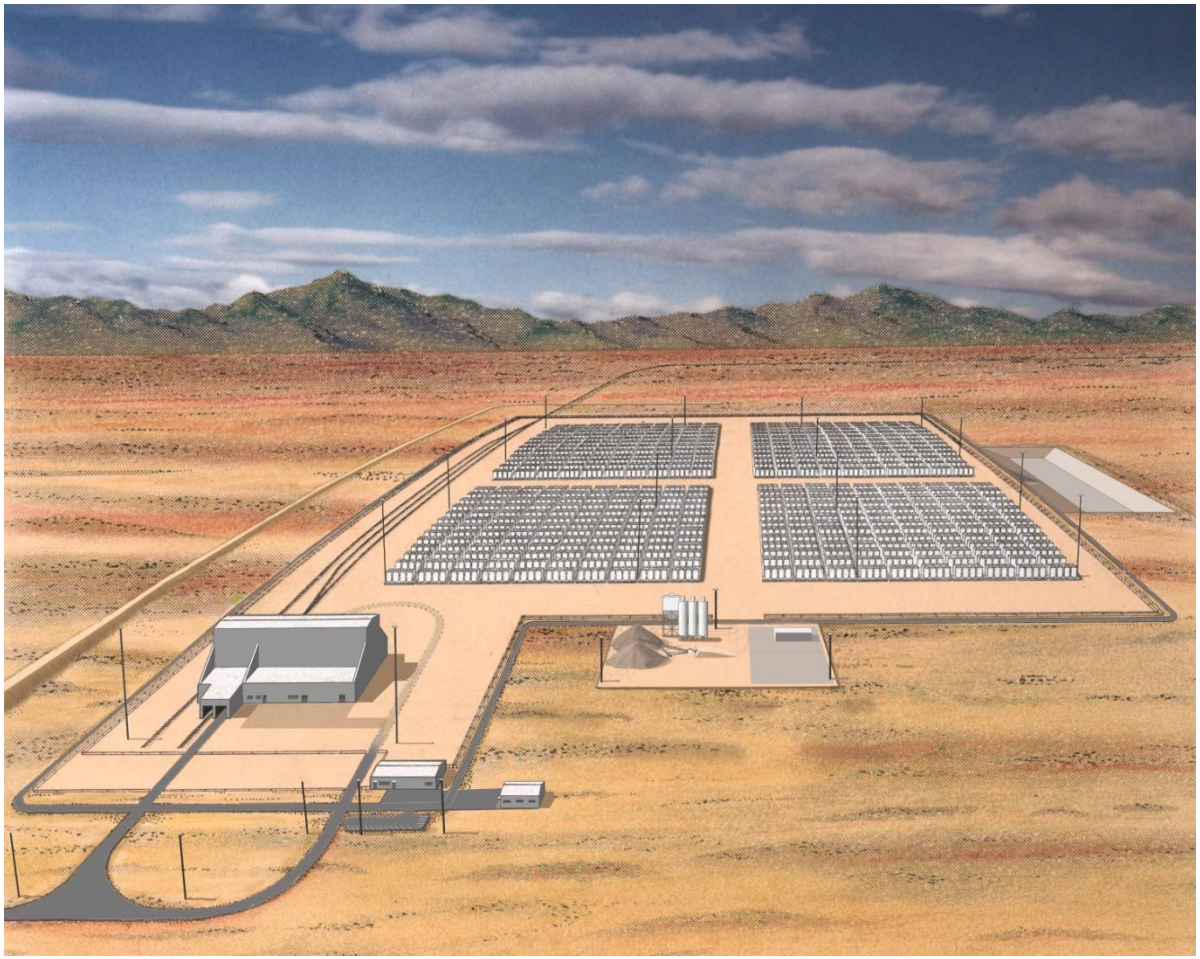
Initial Storage Phase of a UFMF



- 100-acre storage area for 4000 casks (~40,000MTU)

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Concept Schedule

- 2011: Recommend DOE support commercial efforts to develop Hosting Agreements- $10M
- 2013: Present Draft Agreements for DOE or DOE Replacement Authority for Funding (~$25M/yr)
- 2013: Start DOE Supported Design Licensing Work.
- 2016: Upon NRC Construction Authorization Enter into Fixed Price (~$1B) Contract to Remove Fuel From Shutdown Reactors, Construct Private IUMF.
- 2021: Start operations and Fuel Removal. [~$3B Unpaid Unscored Nuclear Waste Fund Available upon performance]

Incorporates lessons learned

- Phased integrated approach
- Competitive commercial private - sector initiative
- Initial Federal government funding with transition to performance contracts.
- Volunteer-host facilities with Binding agreements with incentives and commitments
- Comprehensive life of facility host benefits
- In partnership with enhanced State University and Educational System
- Flexibility for various final disposition options: Adaptive to incorporate advanced technology recycling, advanced technology final waste package manufacturing.

Local and State Hosts, Reactor Communities, Federal Government, Utilities, Private Sector and the US People all benefit.

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