

# Used Nuclear Fuel Integrated Management

**Subcommittee on Nuclear Issues and Waste Disposal  
Committee on Electricity  
National Association Of Regulatory Utility Commissioners  
Washington, D.C.**

**February 19, 2007**



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# Nuclear Industry Supports

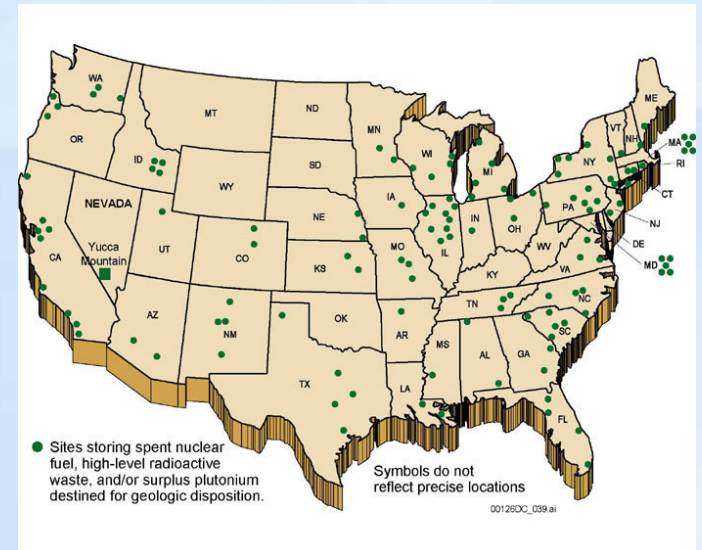
- **Disposal of used fuel and/or by-products in repository**
- **DOE meeting obligation to remove used fuel from nuclear plant sites**
- **R&D and demonstration to close the nuclear fuel cycle**
- **Interim storage of used fuel ideally at fuel recycling sites.**
- **Reforming Nuclear Waste Fund budget**

# Used Fuel Management: Where We Stand Today

- **Yucca Mountain site judged suitable in 2002**
- **“Closing” the nuclear fuel cycle is important for the nuclear renaissance for fuel supply and used fuel management:**
  - recycling used nuclear fuel
  - advanced used fuel reprocessing technologies
  - developing new type of fuel from reprocessed product
  - new reactor designs able to consume fissile materials recovered from used fuel
- **Interim storage until recycling and/or repository available**

# Used Nuclear Fuel Storage

- **Current used fuel inventory**
  - Approximately 55,600 MTU
- **Current dry storage inventory**
  - 9,600 MTU
  - 875 casks/canisters loaded
  - At 36 sites
- **Future dry storage inventory by 2017**
  - Estimating 22,300 MTU
  - 2,000 casks/canisters loaded
  - At 66 sites for 108 plants



# Used Fuel Management: Strategic Direction

- **Integrated program with well-defined short-term, medium-term and long-term goals**
- **Long-term goal has not changed: Even if we “close” the nuclear fuel cycle, still have waste forms that require deep geologic isolation.**
- **Now have better understanding of ...**
  - intermediate steps necessary to reach long-term goal, and
  - time necessary to take those intermediate steps.
- **Maintain dry-cask storage for current plant and prepare for transportation**

# Short-Term Goals

- **Ensure used fuel issues do not become impediment to new nuclear plant construction:**
  - NRC “waste confidence” rule not an issue in licensing
  - New fuel covered by a contract with DOE for disposal
  - Progress toward integrated plan for used fuel management
- **Start process of licensing Yucca Mountain**
- **Begin well-defined program for technologies necessary to “close” nuclear fuel cycle.**
- **Identify and develop potential voluntary sites for long-term interim storage**
  - co-located with advanced reprocessing facilities
  - used fuel is feedstock for reprocessing facilities

# Medium-Term Goals

- **U.S. government take title to and move used fuel to fuel treatment centers**
- **Continue licensing process for Yucca Mountain facility, moving toward finalizing design and construction**
- **Begin deployment and demonstration program for technologies necessary to “close” nuclear fuel cycle**
  - determine type of by-product requiring permanent disposal (used fuel, actinides and fission products, fission products?)

# Long-Term Goals

- **Continue consolidation of used fuel at fuel treatment centers to:**
  - **Store used nuclear fuel to support fuel treatment/reprocessing centers**
  - **Reprocess used fuel**
  - **Fabricate fresh fuel**
  - **Ship waste by-products to Yucca Mountain**
- **Build and operate Yucca Mountain disposal facility**

# Yucca Mountain

- **Repository progress important in any fuel cycle.**
- **The 2008 Yucca Mountain license application is an important sign of progress.**
- **The application/license will be amended as future waste forms are developed.**
- **Standardized canisters are an important priority.**

# Benefits of An Integrated and Phased Program

- **Developing advanced technologies to “close” nuclear fuel cycle provides needed flexibility.**
- **Sites for these facilities logical candidates for interim storage**
  - **Allows DOE to meet statutory obligation to remove used fuel from operating plants**
  - **Sustains public, political, industry confidence in used fuel management program**
- **Repository still required but operation must be integrated into the overall fuel cycle.**