

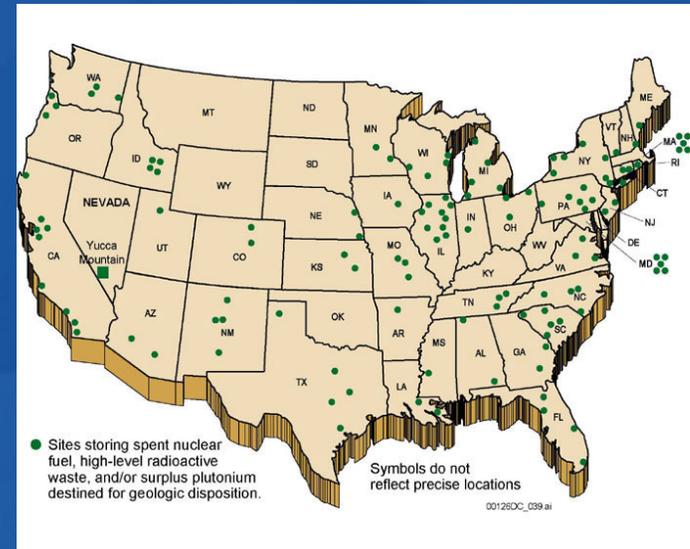
Integrated System Operations

Industry Perspectives

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Used Nuclear Fuel Storage

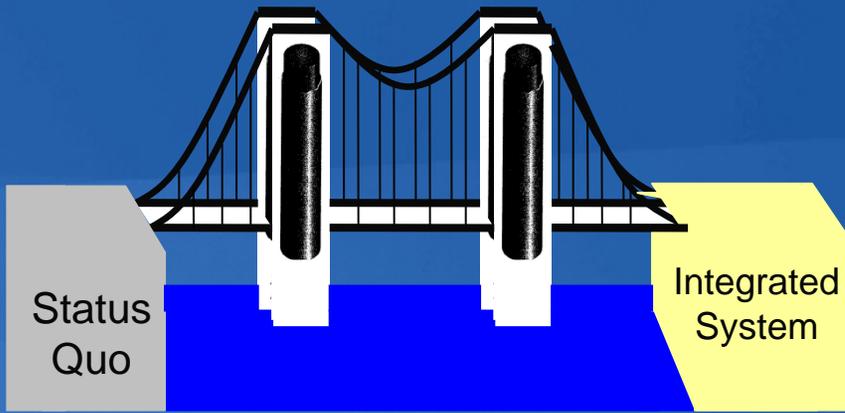
- **Current used fuel inventory**
 - Approximately 60,000 MTU
- **Current dry storage inventory**
 - 11,771 MTU
 - 1017 casks/canisters loaded
 - At 47 sites
- **Future dry storage by 2020**
 - Estimating 25,300 MTU
 - 2,100 casks/canisters loaded
 - At 70 sites



Integrated Used Fuel Management

- **Three-pronged approach to used fuel management**
 - **Interim storage at centralized location(s)**
 - **Research, development, and commercial demonstration to close the nuclear fuel cycle**
 - recycling used nuclear fuel
 - advanced used fuel reprocessing technologies
 - developing new type of fuel from reprocessed product
 - new reactor designs
 - **Permanent disposal facility**
 - Yucca Mountain site judged suitable by Congress in 2002
 - Yucca Mountain licensing process underway
- **Divided into short, medium, and long term goals**

Transportation, Aging and Disposal Canisters (TADs) – an integration tool



- Provide for one time loading of used nuclear fuel at the reactor site
- Connect long-term disposal goals to today's real world of used fuel management
- Are similar to dual purpose dry storage systems already in use (DPCs) – but meeting additional disposal requirements results in reduced capacity and increased costs

TAD Progress

Date	Accomplishment
11/2005	DOE presents TAD concept to industry
1/2006	DOE industry technical dialogue on TADs begins
4/2006	DOE qualifies four vendors to submit proposals for TAD designs
11/2006	DOE publishes Draft TAD Performance Specification
2/2007	Vendors complete TAD proof-of-concept designs
6/2007	DOE publishes final TAD Performance Specification
7/2007	DOE issues procurement for TAD demonstrations (Vendors are asked to submit proposals for obtaining an NRC license for a TAD and working along with a reactor owner to deploy that TAD at one or more reactor sites)
8/2007	Four vendors submit proposals for TAD demonstrations
5/2008	Two vendor teams are awarded contracts to license and deploy demonstration TADs
2013	Earliest date for commercial availability of TADs

Industry perspectives on TADs

- **TAD advantages benefit industry**
 - Reduced fuel handling @ repository, simplified design improves repository licensability
 - Reduced disposal and waste acceptance uncertainty
 - Increased confidence that on-site storage is temporary
 - Represents the first step towards integrating the overall used nuclear fuel management system
- **Industry/DOE dialogue has resolved technical issues**
- **But will the benefits of TADs be realized?**
 - TADs will only be deployed for storage at reactor sites if doing so can be justified as a sound business decision
 - DOE incentives must compensate for increased cost of TADs
 - DOE must continue to support vendors with timely decisions, uninterrupted process, and responsiveness to technical concerns
 - Industry must have confidence that Yucca licensing will continue

Systems integration beyond TADs

- **DOE's "best achievable" date to open Yucca Mountain is 2020**
- **The nation's used fuel management system will evolve significantly between now and 2020**
- **The TAD experience demonstrates that specific integration strategies can be developed in relatively short time frames**
- **Continued demonstration work on TADs between now and 2013 will adequately position the system for the next steps at a time when it is more appropriate to begin planning those steps**
 - **e.g., specific system operational strategies can not be defined until the configuration of the system at the time DOE is ready to begin receiving used nuclear fuel is better known**

Conclusion

- **The nuclear industry is pursuing an integrated approach to used fuel management**
- **Yucca Mountain is currently part of that approach and TADs are a key integration tool**
- **Specific operational strategies for systems integration should be developed when it is appropriate to do so**
 - **Nature of future system evolutions must 1st be known**
- **It is currently too early to engage in detailed systems integration operational planning beyond continued TAD demonstration**