

# Licensing a Nuclear Waste Repository at Yucca Mountain

2008

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# *Licensing Yucca Mountain*

## *Background*

The Nuclear Waste Policy Act of 1982 gave DOE the responsibility to construct and operate a for high-level waste. The NRC was given responsibility for regulating geologic disposal of the waste.

In 1987, Congress directed DOE to focus solely on Yucca Mountain as the site of a repository. DOE made its determination in 2002 that Yucca Mountain would be a suitable location; President George W. Bush and Congress accepted that determination and directed DOE to submit its license application.

High-level nuclear waste consists primarily of spent fuel from the nation's commercial nuclear power plants, spent fuel from U.S. Navy reactors, and certain waste generated by DOE during development of nuclear weapons.

The repository is to hold about 77,000 tons of high-level waste. Approximately 57,000 tons of commercial spent fuel is already in temporary storage at nuclear power plants across the country.

## *The U.S. Nuclear Regulatory Commission's Review of the Yucca Mountain License Application*

The U.S. Nuclear Regulatory Commission (NRC) received an application from the Department of Energy on June 3, 2008, for a license to construct and operate the nation's first geologic repository for high-level nuclear waste at Yucca Mountain, Nev. Submittal of the application marks a major milestone in the nation's policy on nuclear power and high-level waste, as the



Yucca Mountain



focus shifts from DOE's efforts to determine a suitable site and design for a repository to the NRC's independent, thorough and rigorous review of the repository design to determine whether it can safely contain the nation's high-level nuclear waste.

Receipt of the application initiates the NRC review along two concurrent processes. The first process is the technical licensing review by the NRC staff, to assess the technical merits of the repository design and make a decision whether to issue a construction authorization for the re-

pository. The second process is the adjudicatory hearings before one or more of the NRC's Atomic Safety and Licensing Boards, which will hear challenges by a number of parties to the technical and legal aspects of the DOE application. Based on the results of the licensing review and the hearings, the Commission will determine – solely on the technical merits – whether to authorize construction of the Yucca Mountain repository.

## *Major Licensing Milestones*

- DOE submitted a License Application to construct a repository 8/3/08
- Initial 90-day license review (docketing the license application (June 2008 – September 2008).
- Environmental determination (Sept. 2008).
- NRC docketed License Application (Oct. 2008).
- NRC's Safety Evaluation Report (Nov. 2008).
- The Adjudicatory Review Process (LSN, and Hearings). (Nov. 2008 – Nov. 2011).
- Repository Construction Authorization (2011/2012).

## *90 Day Licensing Review Process*

### *June 2008 – September 2008*

The NRC staff's review of the application begins with an initial look at the application to deter-

mine whether it is sufficiently complete to docket the application and begin a thorough technical review, and examination of DOE's environmental documents to determine whether the NRC can adopt DOE's Environmental Impact Statement on the proposed repository in whole or in part. These reviews are expected to take up to 90 days from receipt of the application.

### *Docketing Review*

The docketing review – sometimes called an “acceptance” review – will determine whether the application contains enough information for the NRC staff to initiate its formal technical review. A decision to docket the application would not indicate a decision or intention to approve construction, and would not preclude the NRC from requesting additional information or documentation from DOE during the review. If the NRC docket the application, it will publish a *Federal Register* notice of that decision and, subsequently, a notice of opportunity for the public and interested parties to request a hearing before an ASLB. Both of these actions will also be announced in a news release.

If the NRC staff determines the application is not sufficiently complete to begin its technical review, it would return the application to DOE, which could then revise the application and re-submit it to the NRC.

A decision to docket the application would trigger a three-year schedule set by Congress for the NRC to reach a decision on whether to approve construction. The NRC may ask Congress for a one-year extension if needed.

### *Environmental Determination*

At the same time as the docketing review, the NRC staff will determine to what extent it can adopt DOE's Final Environmental Impact Statement on Yucca Mountain. This DOE report was published in 2002, and was formally submitted to the NRC, along with any supplements generated by DOE since publication, for the Commission's consideration along with the license application on June 3rd.

Using criteria set out in NRC's regulations (10 CFR 51.109), the NRC may either adopt the

Environmental Impact Statement, adopt it in part and require additional supplementation, or not adopt it at all.

A notice of NRC's determination on the environmental review will be published in the *Federal Register* along with NRC's docketing decision.

The remainder of this Fact Sheet assumes the NRC staff has docketed the Yucca Mountain application.

### *NRC Dockets License Application*

Within approximately 3 months (90 days) of LA submittal, the NRC staff expects to decide whether it is able to accept the application for review. If the NRC staff cannot accept the application for review, the application will be returned to DOE with explanation and instructions, as appropriate.

If the NRC staff accepts the application for review, NRC will docket the application and publish a Notice of Hearing in the Federal Register. The Notice will announce that the staff has accepted the application for review and that the staff's independent safety review will begin. The Notice will also include the staff's position on whether it is practicable to adopt DOE's Final Environmental Impact Statement without further supplementation.

### *Technical Review-Safety Evaluation Report*

If the application is docketed, the NRC's technical staff in the Office of Nuclear Material Safety and Safeguards will initiate a detailed, thorough and comprehensive review. This review is expected to involve more than 100 staff and contractor employees with expertise in several technical and scientific disciplines, including geochemistry, hydrology, climatology, structural geology, volcanology, seismology and health physics, as well as chemical, civil, mechanical, nuclear, mining, materials and geological engineering.

If necessary, the NRC staff will request additional information from DOE to help clarify the application. These requests and DOE's responses will be publicly available, unless they

contain sensitive security, privacy or proprietary information.

At the completion of its technical review, the NRC staff will issue a Safety Evaluation Report containing its findings on the repository design and whether the proposed facility will meet NRC regulations and protect public health and safety and whether its construction may be authorized.

## *The Adjudicatory Process*

If the NRC docket the application, it will publish a notice of opportunity to request a hearing. Adjudicatory hearings are conducted by the Atomic Safety and Licensing Board Panel (ASLB), which currently consists of 16 full-time judges and several more part-time judges, all with legal or technical expertise. The panel expects to appoint multiple boards of three judges to hear a variety of legal and technical contentions regarding the Yucca Mountain application.

Under the procedural rules governing the Yucca Mountain proceeding, potential parties will have 30 days from publication of the notice to file petitions for a hearing.

## *Licensing Support Network*

Actually, the adjudicatory process began well before DOE submitted its license application. To promote fairness to all potential parties, transparency for all interested members of the public, and efficiency in the hearing process, the NRC created a Web-based Licensing Support Network. The LSN is capable of containing up to 50 million pages of material designated by the parties as relevant to the proceeding, some of which is expected to be entered into evidence during the Yucca Mountain hearings. These documents are available for anyone to access at <http://www.lsnnet.gov>.

The hearing process established by the NRC for the Yucca Mountain construction authorization proceeding requires DOE to certify that its documents related to the Yucca Mountain application are available on the LSN at least six months

before submitting the application. Others wishing to participate must also certify the availability of their relevant documents on the LSN no later than ninety days after DOE's certification. DOE and the State of Nevada have challenged the other's certification. These challenges are currently before the Commission for decision.

Churchill County certified their document collection on the LSN with the Pre-hearing Presiding Officer Board (ASLB judges) on February 19, 2007. This collection can be found on our website at <http://www.churchillcountynwop.com/> - publications page.

## *The Hearing Process*

### *Standing and Contentions*

For the Yucca Mountain construction authorization proceeding, hearings before the ASLB will follow a formal, trial-type process. To be admitted as a party to the proceeding, potential parties must satisfy three requirements – they must:

- demonstrate “standing,”
- they must file at least one litigable contention, and
- they must be able to demonstrate compliance with the documentation requirements of the LSN.

To demonstrate standing, a potential party would have to show that they have an interest that will be affected by the proposed licensing action and that could be harmed by the outcome of the proceeding. A litigable contention would be a specific concern or issue that the potential party seeks to bring for the ASLB for litigation in the proceeding. A contention usually alleges that the applicant has failed to satisfy some legal or technical regulatory requirement.

Nevada (as the host state) and Nye County (as the host county), for example, automatically have standing, but still must submit at least one litigable contention in order to be parties to the proceeding. Other affected local governments, counties or Indian Tribes, as well as members of the public, may also become parties if they meet the applicable requirements.

The NRC staff and the applicant (DOE) are automatically parties to any proceeding.

Interested states, counties, local governments, and Indian Tribes can also seek permission to participate as “interested governmental participants,” which would allow them to participate without filing a contention.

### *Prehearing Conferences*

One or more ASLBs – each consisting of three judges – will be appointed to conduct the hearing. The ASLB(s) may conduct a prehearing conference to discuss any petitions filed and hear oral arguments from potential parties about why they have standing and why their contentions should be admitted into the hearing. Participation in the prehearing conference will be limited to DOE, NRC staff, potential parties and interested governmental participants, although members of the public who have not sought to participate may attend and observe.



Las Vegas Hearing Facility



ASLB Hearing Room, Rockville, Md.

The principal venue for prehearing conferences will be the NRC’s Las Vegas Hearing Facility, a multimedia facility established specifically for the Yucca Mountain proceeding. Other conferences could be held at the NRC hearing room at agency headquarters in Rockville, Md.

### *Evidentiary Hearings*

One or more ASLBs may hear evidence and issue decisions on admitted issues contesting DOE’s application, or the NRC staff’s determination regarding adoption of the DOE Environmental Impact Statement. Participants will include DOE, the NRC staff and any parties and interested governments that have been admitted to the proceeding. An ASLB may also hold “limited appearance” sessions, at which members of the public may make brief oral statements concerning the proposed repository, and may invite the public to submit written statements.

At an evidentiary hearing, parties and interested governments will present witnesses, conduct cross-examination and make oral arguments before the ASLB regarding the contested safety and environmental issues. The NRC staff position will be based on its Safety Evaluation Report on the proposed facility and its Environmental Impact Statement adoption review. DOE, the NRC staff, admitted parties and interested governments can submit written testimony and exhibits to the ASLB, and those materials will become part of the public record of the proceeding (unless they contain sensitive information).

The ASLBs are likely to issue several decisions on contentions before the final decision on construction authorization is issued. Parties may seek Commission review of these decisions. The Commission’s final decision may be appealed to a U.S. Court of Appeals.

## *Regulations*

The NRC’s regulations can be found in Title 10, Code of Federal Regulations (10 CFR). The primary regulations relevant to the Yucca Mountain review and hearings include:

- [10 CFR Part 2](#) – Rules of practice for domestic licensing proceedings and issuance of orders; Subpart J and Appendix D.
- [10 CFR Part 51](#) – Environmental protection regulations for domestic licensing and related regulatory functions (10 CFR 51.109).
- [10 CFR Part 63](#) – Disposal of high-level radioactive wastes in a geologic repository at Yucca Mountain, Nev.
- [10 CFR Part 71](#) – Packaging and transportation of radioactive material.

NRC regulations can be found on line at <http://www.nrc.gov/reading-rm/doc-collections/cfr/>

## *Accessing the License Application*

The Yucca Mountain License Application is available on the Nuclear Regulatory Commission's public Internet site at <http://www.nrc.gov/waste/hlw-disposal/yucca-lic-app.html>.

The License Application is available to the public in hard copy at the following locations:

Pahrump Information Center  
2341 Postal Drive  
Pahrump, NV 89048  
(775) 727-0896

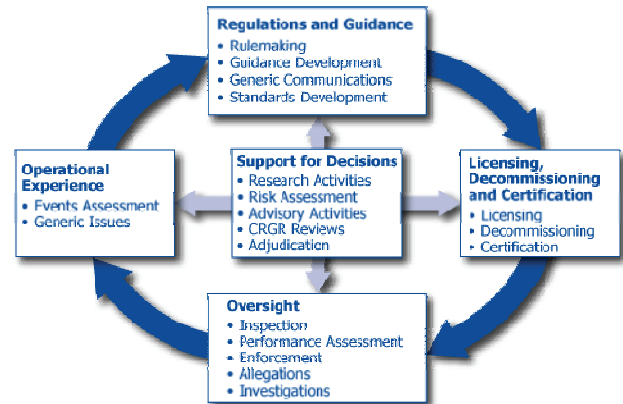
Beatty Library District  
4th Street and Ward  
Beatty, NV 89003  
(775) 553-2257

National Nuclear Security Administration  
Nevada Site Office  
755 E. Flamingo Road,  
Ste 103  
Las Vegas, NV 89119  
(702) 794-5117

DOE Forrestal Public Reading Rm  
1000 Independence Avenue, SW Room 1G-  
033 Washington, DC 20585  
(202) 586-3142

Pahrump Community Library  
701 S. East Street  
Pahrump, NV 89048  
(775) 727-5930

Amargosa Valley Public Library  
829 E. Farm Road  
Amargosa, NV 89020  
(775) 372-5340



Graphic showing how the NRC regulates



Yucca Mountain, Nevada