



YUCCA MOUNTAIN MONITOR

COUNTY of INYO

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YUCCA MOUNTAIN REPOSITORY ASSESSMENT OFFICE UPDATE

The Nuclear Regulatory Commission (“NRC”) received an application from the U. S. Department of Energy (“DOE”) 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, Nevada. Receipt of the application initiated a technical licensing review by the NRC Staff and initiated 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 whether to authorize construction of the Yucca Mountain repository.

On December 22, 2008, the County of Inyo filed a Petition for Intervention that contains 12 contentions. Of the County’s 12 contentions, 5 allege that the license application does not satisfy the applicable safety, security, and technical standards, and 7 allege that the applicable requirements of the National Environmental Policy Act have not been met. Two of the County’s contentions are “joint” contentions filed together with Nye, Churchill, Esmeralda, Lander and Mineral Counties in Nevada. Nye County is the “sponsor” of these two contentions and will have the burden of supporting the contentions before the NRC.

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HYDROLOGY UPDATE

By The Hydrodynamics Group, LLC

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The proposed Yucca Mountain, Nevada nuclear repository site is located just to the west of the Nevada Test Site and forty miles northeast of Death Valley, California. The repository is to be a mine in unsaturated volcanic tuffs beneath the mountain.

Underlying the Tertiary tuffs that make up the upper parts of the mountain at the site is a sequence of much older Paleozoic carbonate rock that is a good aquifer. Winograd and Thordarson (1975) working at the Nevada Test Site in the 1950’s indicated that this large Paleozoic Carbonate Aquifer underlies a large area of southern and eastern Nevada and integrates the groundwater hydrology of a number of valleys in the region. Groundwater that flows beneath Yucca Mountain and the Nevada Test Site and discharges in large spring complexes to the south—Ash Meadows in Nevada, and the Furnace Creek springs in Death Valley, California. Flowing groundwater in the Paleozoic Carbonate Aquifer is one potential pathway by which contaminants from the proposed repository could reach the biosphere.

What is the License Support Network?

The Licensing Support Network (LSN) is in response to “a congressional mandate that the Nuclear Regulatory Commission (NRC) reach a determination on the U. S. Department of Energy’s (DOE’s) application for construction authorization for a high-level radioactive waste repository at Yucca Mountain, Nevada, in a three-year time frame. To shorten the time spent on the exchange of documents that may be used as evidence in the NRC licensing proceeding, the parties and potential parties to the hearing on the DOE application will make their documents available via the Internet before the DOE license application is submitted to the NRC. The LSN provides a single place where the parties and potential parties to the licensing hearing can search for documents from any/all of those collections in a uniform way. During peak usage, access to the system may be restricted to participants in the licensing process.” (This is the description from the LSN website, under “About the LSN” at <http://www.lsnnet.gov>—the official United States Government website.)

Should you wish to see all documents filed on the LSN by Inyo County go to: <http://www.lsnnet.gov>, “Advanced Search Form”, enter “*” in “Document Information Title”, under “Information Sources” click on “Deselect All”, click on Inyo County. You can also view other Participants’ documents filed on the LSN.



Directory to Websites

Inyo County Yucca Mountain Repository Assessment

Office: <http://www.inyoyucca.org>

- ◆ Inyo County’s Petition to Intervene
- ◆ U. S. Dept. of Energy’s (DOE) Answer to Inyo County’s Petition
- ◆ Inyo County’s Response to DOE’s Answer

Nuclear Regulatory Commission: <http://www.nrc.gov>

- ◆ License Application and Hearing Schedule
- ◆ Browse Public Electronic Docket Folders in the Electronic Reading Room

U.S. Department of Energy

Office of Civilian Radioactive Waste Management:

<http://www.ocrwm.doe.gov>

- ◆ Information on Yucca Mountain Repository, Quick References for Citizens

License Support Network: <http://www.lsnnet.gov>

- ◆ Documents “uploaded” to website by Participants of the NRC licensing

Would you like to receive upcoming Yucca Mountain newsletters via e-mail? If you would, please contact me at: alembke@inyocounty.us. Please be advised that all newsletters are sent in Adobe Acrobat 9.0 format.

Yucca Update (Continued from page 1)

The Licensing Review Process

Docketing Review and Environmental Determination

On September 8, 2008, the NRC Staff announced that it had completed its docketing review, sometimes called an “acceptance” review, and that it had determined that the application contains enough information for the NRC Staff to initiate its formal technical review. The decision to docket the application triggered a three-year schedule set by Congress for the NRC to reach a decision on whether to approve construction. Under the Act, the NRC may ask Congress for a one-year extension if needed.

On October 22, 2008, the NRC Staff announced that it had completed an examination of DOE’s environmental documents and had determined that the NRC can adopt, with further supplementation, DOE’s Environmental Impact Statement (“EIS”) on the proposed repository. The NRC Staff found that additional supplementation of the environmental documentation is needed to address all of the repository’s impacts on groundwater and on surface discharges of groundwater. DOE has issued a notice that it will prepare the necessary supplementation of the environmental documents. The County submitted comments to DOE recommending that the supplementation include an analysis of the potential impacts resulting from transport of radioactive contaminants to through a regional aquifer that underlies the proposed repository.

The Adjudicatory Process

On October 22, 2008, the NRC published a notice stating that a hearing on the license application will be conducted and that interested parties could file petitions to intervene in the licensing proceedings. The matters to be considered at the hearing are whether the license application satisfies the applicable safety, security, and technical standards and whether the applicable requirements of the National Environmental Policy Act (“NEPA”) have been met.

Hearings on these matters will be conducted by the Atomic Safety and Licensing Board Panel, which currently consists of 16 full-time judges and several part-time judges, all with legal or technical expertise. The panel may appoint multiple boards of three judges to hear the legal and technical contentions regarding the Yucca Mountain application. For the Yucca Mountain construction authorization proceeding, hearings before the ASLB will follow a formal, trial-type process.

The October 22nd notice stated that potential parties had until December 22, 2008 to file Petitions to Intervene. 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.

With regard to standing, Nevada (as the host state) and Nye County (as the host county) automatically have standing, but still must submit at least one litigable contention in order to be parties to the proceeding. Concerning Inyo County’s standing, NRC’s October 22nd notice stated that “any AULG seeking party status shall be considered a party to this proceeding, provided that it files at least one admissible contention...” A contention contests the adequacy of DOE’s license application or the NRC Staff’s determination regarding adoption of the DOE EIS.

Evidentiary Hearings

Once a decision has been made as to which contentions are admissible, one or more ASLBs will be appointed to conduct the hearing. The ASLBs may hear evidence and issue decisions on the admissible contentions concerning DOE’s application, or concerning the NRC Staff’s determination regarding adoption of the DOE EIS. 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.

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Hydrology Update (Continued from page 1)

Working on behalf of Inyo County, California, the Hydrodynamics Group is concerned with the potential for contaminants from the Yucca Mountain Repository to reach the Paleozoic Carbonate Aquifer. A number of groundwater models of the hydrology of the area were created. Key models include Yucca Mountain Repository site model by DOE, several regional models by the USGS, and several models by our Group. The models show that should contaminants reach the Carbonate Aquifer they will almost certainly be quickly transported to the springs in Death Valley.

What Protects the Carbonate Aquifer at Yucca Mountain

Only one borehole, UE 25p1, reached the Paleozoic Carbonate Aquifer in the vicinity of Yucca Mountain; it penetrated the aquifer at a depth of approximately 1200 m (3900 ft). The aquifer was quite permeable with a low porosity—less than 1% porosity. It also had a hydraulic head in the Paleozoic Carbonate Aquifer that was 15 m higher than the hydraulic head in the overlying Tertiary volcanic rocks. This higher head has the potential to move groundwater upward from the carbonate into the overlying volcanic sequence of rocks. As long as the head relationship remains as presently observed, the carbonate is protected from contamination moving downward from the repository to the Carbonate Aquifer. Our group drilled a second deep Paleozoic Carbonate Aquifer observation well just to the northeast of the Funeral Mountains in California, adjacent to Death Valley National Park.

A Potential Problem

Hydraulic head is one of the more ephemeral of hydrologic conditions. Head is subject to change by development of groundwater for water supply in the Amargosa Valley south of the Repository site. The population of southern Nevada is growing rapidly. Local groundwater is looked to for a large portion of the water supply. Both the valley fill deposits and the Paleozoic Carbonate Aquifer are targets for development. Groundwater pumping, lowering the hydraulic head, could eliminate the upward hydraulic head gradient that serves as the barrier to contaminate movement into the Carbonate Aquifer at Yucca Mountain.

For example, recently the Southern Nevada Water Authority (SNWA) proposed to pump groundwater from the Paleozoic Carbonate Aquifer in the vicinity of Ely, Nevada and pipe it to Las Vegas. In a recent request they received approval to pump from the Nevada State Engineer pump 74 million cubic meters (60,000 acre-feet) annually from Spring Valley. Nye County has recently made a request to pump 87,680 acre-feet per year, from the Carbonate Aquifer in the vicinity of the southern boundary of the Nevada Test Site.

The Bottom Line

Ground water development could destroy the upward head gradient in the Paleozoic Carbonate Aquifer that currently serves as a barrier to downward contaminant movement at Yucca Mountain. Should contaminants reach the Paleozoic Carbonate Aquifer, they will be transported quickly to the springs in Death Valley.

Yucca Mountain RAO Using GIS to Answer Spatial Questions

By Chris Howard, GIS Administrator

Many questions surrounding the potential impact of the Yucca Mountain Project on Inyo County are geographic – How much Yucca Mountain groundwater flows into Inyo County? Where are the planned nuclear waste transportation corridors? Who owns the land that might be affected by a spill? In the event of an evacuation, will emergency responders be able to contact residents?

The answers to these and other questions would be difficult to determine without Geographic Information Systems (GIS). A GIS is comprised of digital map layers and associated attribute data. With a GIS, you can overlay several map layers to examine their relationships. You can also perform spatial queries - for example, you can use GIS to find emergency response centers within a given distance of any location or get the addresses of property owners adjacent a particular road.

The Yucca Mountain RAO is working closely with several County departments to develop a comprehensive GIS library consisting of many map layers. In particular, the RAO, in conjunction with the Public Works Department and Assessor's Office, is using GIS to build an Inyo County-wide Assessor Parcel ownership GIS layer. With this GIS ownership layer, the RAO will be able to map Inyo County property ownership and assess the possible impact of transporting nuclear waste through Inyo County on private and public land owners.

The RAO is also using GIS to assist in the County's groundwater modeling effort to determine the extent of carbonate groundwater flow from the Amargosa Valley into Death Valley. The County is working closely with the Park Service to map the location of all springs and their associated geochemical attributes in Death Valley National Park. RAO hydrologists will use the GIS spring layer as an input to groundwater flow models to better determine the connectivity between the two basins.

Inyo County residents are benefiting from the County's use of GIS in disaster planning and emergency services. The RAO is working closely with the Inyo County Sheriff's Department and Emergency Response Officials to use GIS to improve disaster services, with particular attention to E-911 and reverse-911 public notifications. We are improving and refining the County's GIS street address layer, and once complete, will be integrated into the existing 911 and reverse-911 programs.

The GIS digital library will be online Spring 2009 and portions will be made available to Inyo County citizens in Summer 2009. For more information about the Inyo County GIS Program, please contact Chris Howard at 760.878.0005 or choward@inyocounty.us.



Yucca Update—Evidentiary Hearings (Continued from page 3)

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 (a major component of the license application) on the proposed facility and its EIS 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.

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

If construction of the Yucca Mountain repository were to be authorized, before beginning to operate the facility, DOE would have to update the application requesting a license to receive and possess high-level waste at Yucca Mountain. This application would also be subject to the NRC Staff technical review and hearing processes.

Participants in the hearing will include DOE, the NRC Staff and any parties and interested governments that have been admitted to the proceeding. In February 2009, the DOE responded to Petitions to Intervene, including Inyo County's and the County responded to answers that were filed. It is anticipated that the ASLB will conduct a prehearing conference in March and that it will issue a decision on what contentions are admissible in May, 2009. Parties may appeal decisions on the admissibility of contentions to the NRC and may join other contentions filed by parties.

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