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September 13, 2005

Re: Falsification of Yucca Mountain Project Modeling Data

Dear Member of Congress:

On March 16, Secretary of Energy Samuel Bodman and former U.S. Geologic Survey Director Chip Groat announced that USGS scientists studying water infiltration and climate at Yucca Mountain in Nevada “may have falsified” documentation. Since that announcement, some redacted emails written by DOE and USGS scientists between 1998 and 2000 have been released that clearly show that USGS scientists did not follow established procedures for verifying their work and were under tremendous pressure to get the “right” results quickly.

Additional DOE and USGS emails written between 1996 and 1998 that DOE posted online in June 2004 further show that senior DOE managers already knew at that time that the site would not qualify under the DOE’s licensing guidelines (which DOE has since discarded) and that the design for the repository could not be licensed by the Nuclear Regulatory Commission (NRC).

These emails raise critical questions about the validity of the scientific work at the proposed Yucca Mountain repository site and cast doubt on the ability of DOE to submit an accurate license application to the NRC. ***We urge Congress to immediately halt the federal government’s work on the Yucca Mountain license application, require DOE to publicly release all relevant information related to the falsification, and convene an independent investigation into the implications of data falsification on DOE’s license application.***

Quality Assurance is Crucial to Good Science

The emails that have been released thus far clearly indicate that scientists altered and omitted various data related to quality assurance and the modeling of water flow through the ground at Yucca Mountain. Water infiltration is one of the most crucial questions in determining whether Yucca Mountain can safely contain high-level radioactive waste for the hundreds of thousands of years that it will remain dangerous. Faster water movement will cause the radioactive waste to migrate more rapidly through the ground to the aquifer, which is used for drinking water and irrigation.

Quality assurance (QA) is extremely important, especially for a project spanning several decades with thousands of people working on it. QA procedures are established to ensure that the data are generated, documented, and reported correctly. At Yucca Mountain, QA is integral to the

accuracy of the water infiltration models, which have been used to predict how rapidly water can travel through the mountain, how waste containers will corrode, and when the containers will release material into the environment.

Longstanding Quality Assurance Problems at Yucca

The recently released emails are not the first indication of quality assurance problems with research at Yucca Mountain. The Government Accountability Office has issued 7 reports since 1988 repeatedly criticizing DOE's and USGS' quality assurance and model validation programs. Over the years, DOE has stopped its contractors' work on the project again and again in order to address these problems. Yet, in its most recent report in April 2004, GAO continued to conclude that "DOE is not yet in a position to demonstrate to NRC that its quality assurance program can ensure the safe construction and long-term operation of the repository."

Other inquiries, as well as the DOE emails from 1996 through 1998, have also criticized the accuracy of the scientific studies at Yucca Mountain. A 2001 investigation by the DOE Inspector General found that there was a tendency in the Yucca Mountain Project to reach premature conclusions about the suitability of the Yucca Mountain site, and that a number of scientists had criticism of the studies being done.

Water Infiltration Has Long Been Questionable at Yucca

These emails are not the first time that DOE's research of water infiltration and geology at Yucca Mountain has been called into question. In 1996, a team of researchers from Los Alamos National Laboratory was investigating the nature of the rock at Yucca Mountain, when they detected chlorine-36 (a radioactive isotope of chlorine not found in significant quantities in nature) at repository depth. After further investigation, the team, led by June Fabryka-Martin, determined that the chlorine-36 had likely come from atmospheric atomic bomb testing over the Pacific, indicating that water had entered and moved down through the rock at Yucca Mountain in fifty years. This rate of water infiltration was many times faster than DOE's models of the site predicted.

In 1998, more than 200 public interest organizations petitioned the DOE to "immediately disqualify the Yucca Mountain, Nevada site and declare it unsuitable for further consideration as a high-level nuclear waste repository" as defined by the Site Recommendation Guidelines in place at that time. DOE claimed that it needed to do further site characterization, but subsequently abolished the site selection geologic guidelines that DOE had established in 1984.

An Independent Investigation Is Imperative

Investigations by the Inspector Generals of both DOE and USGS, as well as a criminal investigation by the Federal Bureau of Investigation, are currently underway. However, these investigations are focusing exclusively on what specifically was falsified and whether there was criminal activity—not on its impact on the license application, which is based on these models.

The House Subcommittee on the Federal Workforce and Agency Organization is conducting its own investigation, but DOE has repeatedly ignored requests by the Subcommittee for relevant documents, meetings with DOE managers and DOE and USGS scientists, and responses to written questions. The Subcommittee was forced to subpoena DOE to turn over documents by

July 22. To date, DOE has not yet provided all of the requested information to the Subcommittee.

DOE is currently conducting an internal review of the ramifications of the 1998-2000 emails on its license application, but it is clear that DOE decided on its conclusions well before beginning this review. In a DOE memo faxed on March 13—before the agency even announced the falsification to the public—DOE had already decided that “the information contained in the emails does not impact the site recommendation and we do not believe that the questionable data has any meaningful effect on the results supporting the site recommendation.” Despite the fact that the review will not be completed for several months, deputy director of the Yucca Mountain Project, John Arthur, announced on June 6 that the water infiltration research is “technically defensible.”

The scientific and management problems with Yucca Mountain are longstanding and fundamental. Despite the rhetoric, it is clear that DOE has not strengthened the scientific and technical basis for the project, nor made significant progress in developing a “high-quality” license application. Asking DOE to conduct a sound, reliable investigation of itself is akin to asking the fox to count the hens to make sure none of them have been eaten. DOE claims that the NRC will be the final arbiter of whether the science at Yucca Mountain is sound, but the NRC cannot be expected to sort through and find falsified data. Nor should DOE be allowed to continue to waste taxpayer dollars on a program that has been fraught with technical, scientific, and management problems since its inception.

On August 22, the Environmental Protection Agency released a draft rule for public comment that revises its radiation release standards for Yucca Mountain, as required by the United States Court of Appeals for the District of Columbia Circuit in its July 2004 decision. The draft rule is highly controversial, setting a standard that drastically weakens radiation protection for future generations. Given that the scientific integrity of the research at the site is integral to meeting EPA health and safety standards for the site, ***Congress should immediately halt the federal government’s work on the Yucca Mountain license application, require DOE to publicly release all relevant information related to the falsification, and convene an independent investigation into the implications of data falsification on DOE’s license application***

If you have any questions or need further information, please contact Michele Boyd at Public Citizen (202-454-5134) or Kevin Kamps at the Nuclear Information and Resource Service (202-328-0002).

Sincerely,

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