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New Yucca Mountain Repository Design to be Simpler, Safer and More Cost Effective

WASHINGTON, DC – The U.S. Department of Energy’s Office of Civilian Radioactive Waste Management (OCRWM) today instructed its managing contractor to devise a plan to operate the Yucca Mountain repository as a primarily “clean” or non-contaminated facility. Operating the site “clean” will improve the safety, operation, and long-term performance of Yucca Mountain.

“Our new path forward will provide clear direction to improve safety and reliability as well as reduce programmatic risk,” OCRWM’s Acting Director Paul Golan said. “While this change requires coordination with utilities and the Nuclear Regulatory Commission (NRC), we are confident that the simpler we make the design, the more reliable the project will be.”

The direction for the change in design, outlined in a letter to Bechtel SAIC, means that most spent nuclear fuel would be sent to the repository in a standardized canister that would not require repetitive handling of fuel prior to disposal. Prior to today, plans called for shipping spent fuel assemblies in various types of canisters to the repository where workers would handle 70,000 tons of spent fuel up to four separate times per fuel assembly.

The improved design is intended to simplify fuel handling and the construction of the repository, while easing complexities of Yucca Mountain’s post-construction operations. The new path envisions spent fuel being delivered to Yucca Mountain primarily in standard canisters which are then placed in a waste package for emplacement, without handling individual fuel canisters.

Switching to a clean facility frees the project from having to construct several multi-million square-foot, multi-billion dollar facilities for handling spent fuel. It also reduces the potential hazards caused by the oxidation of bare spent nuclear fuel during handling. Under the previous plan, the design was to construct large handling facilities that would prepare fuel for emplacement into the repository once it is received from utilities or other

sources. These facilities would have been inerted, meaning the composition of the air in the facilities would be altered to reduce potential oxidation. The old design was unique to the proposed repository, as no similar facilities had ever been built or licensed in the United States.

“The old plan is complex and adds a dimension of uncertainty to obtaining an NRC license. Nothing like this has even been licensed,” Acting Director Golan said. “The program needs to make a solid, fully defensible technical case to the Nuclear Regulatory Commission, and this change takes a degree of complexity out of the licensing process. The bottom line is that this new path gives us simplification in design, licensing, and construction, while increasing worker and public safety.”

The letter, signed by OCRWM’s deputy director W. John Arthur, specifies development of a “conceptual design,” or CD-1, package that addresses simpler surface facility and canister operations. The final package will be submitted to the Secretary of Energy’s Acquisition Advisory Board for review. If the board approves the package, it will become the project’s baseline design.

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