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Nevada official calls for NRC to address “critical safety issue” related to nuclear waste dump proposed for Yucca Mountain

CARSON CITY – Bob Loux, executive director of Nevada’s Agency for Nuclear Projects, urged the U.S. Nuclear Regulatory Commission (NRC) today to reject the U.S. Department of Energy’s plan to claim safety credit for “drip shields” expected to protect metal nuclear waste containers from water dripping into the proposed underground waste dump at Yucca Mountain. Installation of the drip shields would not take place for 100 to 300 years after the dump becomes operational, according to DOE’s plans.

Loux sent a strongly worded letter today to Dale Klein, chairman of the NRC, the organization that will consider DOE’s application to obtain a license to move forward with the Yucca Mountain Project.

“I write to draw the commission’s attention to a critical safety and legal issue that has been disregarded by the NRC staff in its pre-licensing interactions with DOE on the proposed nuclear waste repository at Yucca Mountain,” Loux wrote. “The issue is whether any safety credit should be given to so-called ‘drip shields’ in the post-closure repository performance assessment when, as explained below, it is doubtful that the drip shields would ever be installed.”

Nevada opposes DOE’s plans to build a high-level nuclear waste dump at Yucca Mountain, some 90 miles northwest of Las Vegas.

In today’s letter, Loux said DOE’s attempts to comply with federal radiation standards have relied heavily on titanium drip shields to protect the nuclear waste packages from water that is expected to drip through the mountain over thousands of years. Loux described the shields as “kind of a series of titanium tents covering the entire length of waste package emplacements in the repository tunnels.”

(more)

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Loux explained that the idea of using drip shields as a part of the Engineered Barrier System for the repository arose in the mid-1990s after DOE discovered that, contrary to previous expectations, Yucca Mountain’s rock was highly fractured and allowed water to infiltrate the repository. This water could accelerate corrosion of the thousands of radioactive waste packages, he said. Since then, he said DOE has made these drip shields a key part of how it plans to protect Nevadans from radiation releases from the dump.

“Counting the drip shields (leaving aside considerations of whether they will perform as proposed) might make sense if DOE actually planned to install the drip shields when it emplaced waste packages,” Loux added. “Instead, it plans to install them just prior to repository *closure*, which could be 100 to 300 years after the repository becomes operational.”

Loux went on to say that “it is understandable that DOE would want to put off installation indefinitely because of the huge expense and complications involved. But the flip side is that NRC should accordingly not allow DOE to include the drip shields (to support its application for a license to build the project)... The scope and scale of the project for manufacturing and installing the proposed drip shields would be enormous. The drip shields would be made of Titanium 7, would weigh about four tons each, and the repository would need at least 12,500 of them. DOE would have to buy an amount of very expensive titanium metal equal to three and a half years of the entire U.S. domestic production at a cost of at least \$5 billion.”

A more fundamental problem, he added, is that radiation, dust, rock slides, corrosion and “as-yet-nonexistent robotics” make it impossible to install such shields inside the repository after it has been operating for decades. Loux wrote that DOE’s own documents concede that “human beings probably cannot reliably make a drip shield.”

Given all the uncertainties over whether the drip shields would ever be installed, he said “it would make a mockery” of the NRC licensing process to allow their inclusion in the safety determination. He added that “NRC should not allow DOE to rely on pie in the sky.”

“Because of all the above, Nevada respectfully requests NRC to advise DOE that, absent a drastic change in DOE’s drip shield installation plans, DOE should not give, and NRC cannot legally allow, any safety credit for drip shields in DOE’s TSPA (Total System Performance Assessment) for the upcoming Yucca Mountain License Application.”

For a copy of the letter and the attachments, visit www.state.nv.us/nucwaste.

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