

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

IN THE MATTER OF)
STATE OF NEVADA,)
)
)
PETITION FOR RULEMAKING TO)
AMEND PART 63 TO CLARIFY THE)
LIMITS ON SPENT FUEL STORAGE)
AT THE YUCCA MOUNTAIN SITE)
_____)

I. INTRODUCTION

On August 29, 2006, DOE presented some of its current plans for the Yucca repository at a technical exchange and management meeting with NRC Staff in Las Vegas. At this meeting, DOE indicated that its current plans (through DOE's "Critical Decision-1 Process" (or "CD-1"), definitely include both a "Receipt Facility" and an "Aging Facility" or "Aging Pad." The "Receipt Facility" would be designed to receive commercial spent nuclear fuel from off-site and to prepare it for the Aging Facility. The Aging Facility would be designed to store 21,000 MTHM of spent fuel on the Yucca site.

On December 4, 2006, the NRC Staff responded to a letter from Nevada about what surface storage of spent nuclear fuel might be allowed at the Yucca Mountain Site under the Nuclear Waste Policy Act and 10 C.F.R. Part 63. The NRC Staff stated that surface storage is permissible "to the extent such storage is integral to waste handling and disposal at the proposed repository," and that "storage may also be integral to the thermal-loading strategy the applicant may adopt in its design of the entire repository system."

While these statements offer some guidance, they also leave many questions unanswered. Most importantly, it remains unclear why a "thermal loading strategy" must necessarily require the storage of significant quantities of spent nuclear on the Yucca Mountain Site given DOE's power to dictate waste acceptance criteria and related shipping schedules for the Site consistent with the terms of its NRC license. Indeed, it is absurd to suppose that storage in capacities approaching anywhere near 21,000 MTHM of spent fuel on the Site could be justified as part of a "thermal loading" strategy that "is integral to waste handling and disposal."

The Nuclear Regulatory Commission ("NRC") has generally been diligent in advising the Department of Energy ("DOE") of its expectations for a satisfactory and complete license application for the Yucca Mountain high-level radioactive waste repository. It promulgated a collection of regulations applicable only to Yucca Mountain

in 10 C.F.R. Part 63 and amended this Part from time to time as issues arose. It supplemented Part 63 with a detailed licensing review plan. NRC Staff has also frequently discussed its expectations at management and technical exchange meetings with DOE. Nevada believes that DOE's stated plans for an "Aging Facility" for 21,000 MTHM of spent nuclear fuel are manifestly unlawful. NRC should promptly so advise DOE. Otherwise, taxpayer dollars and DOE and NRC time and resources will be wasted on a hopeless DOE venture, and NRC will have defaulted in its obligation to advise DOE early about its licensing expectations.

Given the importance of this matter, and the persistence of DOE's apparent belief that a gigantic "Aging Facility" must be part of the Yucca Mountain repository, Nevada requests that NRC amend Part 63 to specify by rule the limits of permissible spent fuel storage at Yucca Mountain. Related changes should be made to Part 71, which applies to transportation of spent fuel to Yucca Mountain. Rulemaking has the added advantages of allowing other interested persons to participate in NRC's decision process and of limiting the scope of the expected Yucca licensing hearing. The supporting rationale for Nevada's position and the text of Nevada's proposed rule are set forth below.

II. RATIONALE SUPPORTING NEVADA'S PETITION

The Nuclear Waste Policy Act of 1982 ("NWPA") addressed the accumulation of spent fuel on reactor sites by authorizing three distinct types of facilities.

First, Subtitle A provided for the development of a "repository," which is defined in section 2 as a "system...that is intended to be used for, or may be used for, the permanent deep geologic disposal of high-level radioactive waste and spent nuclear fuel," including "surface and subsurface areas at which high-level radioactive waste and spent fuel handling activities are conducted."

Second, Subtitle B addressed concerns about delays in availability of a repository. It recognized that "persons owning and operating civilian nuclear power plants have the primary responsibility for providing interim storage," but, as a fallback, it authorized a limited interim storage program, with the qualification in section 135(a)(2) that no site being considered for a repository can be used for interim storage, and the further qualification in section 135(b) that the program would apply only when the Commission determines that a particular reactor licensee is unable to provide for adequate storage despite having exhausted available alternatives. The Commission never made any such finding. (Nor, most likely, could it have, since spent fuel interim storage facilities that can safely and adequately store spent fuel at reactor sites for up to 100 years or more already exist and are being further developed across the nation.) The authority provided in Subtitle B effectively expired in 1990 pursuant to section 136(a).

Third, to address the possibility that the repository capacity and schedule might be insufficient to allow expeditious removal of spent fuel from reactor sites, Subtitle C provided for the parallel development of a federal monitored retrievable storage facility, or "MRS," with the qualification in section 141(c)(2) that Congress must specifically

authorize an MRS site, and the further qualification in section 141(g) that no MRS can be located on a site being considered for a repository. Specifically, no MRS may be constructed in Nevada.

Congress also provided in section 302 for contracts between persons owning or holding commercial spent fuel and the DOE. These so-called “standard contracts” provide for DOE to issue eventually a schedule for the acceptance of spent fuel, and for contract holders to be able to trade places in the acceptance queue. However, nothing in section 302 changes anything in Subtitles A through C, and, in any event, no standard contract can give contract holders something DOE is not statutorily authorized to give.

It is clear from the structure and text of the NWPA that the repository authorized by Subtitle A was intended to be the permanent solution to the problem of spent fuel storage, while the facilities originally authorized by Subtitles B and C were intended to be the solution to the interim storage problems that might arise should the repository program authorized by Subtitle A be delayed. The functions of the facilities authorized by Subtitles B and C would complement but not overlap the function of the repository authorized by Subtitle A. In short, the repository is for disposal only.¹ Indeed, if Congress had intended a repository site to be used for storage, neither Subtitle B nor Subtitle C would have been necessary, and the statutory prohibition on co-location of a repository and an interim storage facility or MRS would have been nonsensical. When Congress amended the NWPA in 1987 to limit the repository program to the Yucca Mountain site and to make changes in the MRS decision process, it made no change in the purpose of a repository authorized by Subtitle A. Moreover, as the NRC is aware, there have been repeated legislative initiatives to amend the NWPA to authorize storage of spent fuel at Yucca Mountain, and all of them have failed. Thus, it remains the case that a repository is for *disposal only*.²

DOE’s plans for an “Aging Facility” go far beyond what Congress authorized. DOE’s proposed 21,000 MTHM of spent fuel is well in excess of what might conceivably be required for efficient emplacement (disposal), logistical or thermal loading operations at the Yucca repository. In fact, 21,000 MTHM of spent fuel is seven times the amount that can be physically emplaced in the underground repository in any

¹ Obviously, a disposal facility must include some limited “storage” capability so that disposal operations may proceed in a safe and efficient manner, but storage for “aging” or other purposes would neither be needed nor permitted. This is likewise supported by the legislative history. *See e.g.*, H.R. Rep. No. 97-491, Part I, at p. 34 (“Surface facilities [for the repository] will include buildings for storing waste and spent fuel *for logistical purposes....*” (Emphasis added.)

² Indeed, an early version of the Energy Policy Act of 1992 would have allowed the co-location of an MRS and a repository in Nevada. *See* H.R. Rep. No. 102-474(I) at pp. 1984, 2020. Congress rejected this idea, and the Act accordingly includes no such provision.

one year and, indeed, DOE has specifically stated (in an August 29 meeting handout) that the Receipt Facility, whose primary if not sole purpose is to prepare spent fuel for the Aging Facility, is intended to “*decouple* the waste receipt rate from the emplacement rate.” Even more telling, DOE’s plans specifically call for the acceptance of large quantities of spent fuel that *do not meet Yucca’s disposal acceptance criteria*. That is apparently why the spent fuel must be “aged” in the “Aging Facility.” Clearly, spent fuel can more easily be “aged” where it is currently safely located – on reactor and spent fuel storage sites.³ Likewise, there is no apparent reason why storage on the Yucca Mountain Site must be part of any “thermal-loading strategy” because spent nuclear fuel can be cooled at reactor or other storage sites. Moreover, DOE can arrange for the proper mix of spent fuel by enforcing appropriate criteria under section 302(c)(6). Such criteria must provide “the terms and conditions under which such [Yucca] disposal services shall be made available.”

Clearly, DOE’s proposed “Aging Facility” is nothing more than an unlawful MRS, in embarrassingly thin disguise.

III. NEVADA’S PROPOSED RULE

Given the above, Nevada respectfully proposes that NRC amend Parts 63 and 71 as follows:

1. First, **10 C.F.R. § 63.21(c)(22)** [regarding the contents of the license application] should be amended to add the following **new paragraph (viii)** at the end:

“Plans for the emplacement of spent nuclear fuel in the underground facility within a reasonably short time after it is received (in no event longer than one year), and information to explain why any facilities for the storage of spent nuclear fuel in the repository operations area or on the Site are integral to safe waste handling and disposal in the underground facility.”

³ In the preamble to the original Part 63, NRC stated that no license to receive waste or spent fuel would be issued until NRC is able to find that DOE has completed construction of sufficient underground storage space for initial operations, and it concluded that Part 63 does not allow early use of surface facilities for storage of spent fuel. 66 Fed. Reg. 55738 (November 2, 2001). This is consistent with the text of 10 C.F.R. § 63.41(a)(1), which provides that no license may be issued until NRC finds that construction of “[a]ny underground storage space required for initial operation [is] substantially complete.” Thus, NRC’s regulations appear consistent with the NWPA in eliminating the possibility of spent fuel storage that is decoupled from actual repository operations and logistics. Nevertheless, DOE has somehow come to the conclusion that an “Aging Facility” may be authorized. Though the law appears clear, granting this petition for rulemaking will eliminate any putative ambiguity in this regard.

2. Second, **10 C.F.R. § 63.41(b)** [regarding required license conditions] should be amended to add a **new subsection (c)** to read as follows:


“The license shall include additional conditions as follows: (1) no spent nuclear fuel may be received in the geologic repository operations area, or on the Site, unless there is reasonable assurance it can be moved into the underground facility within a reasonably short time (in no event later than one year after receipt); (2) no spent nuclear fuel may be stored in the geologic repository operations area, or on the Site, unless such storage is necessary for the safe and efficient emplacement of spent fuel in the underground facility; and (3) no spent nuclear fuel may be stored in the geologic repository operations area, or on the Site, for the purpose primarily of aging (cooling or radioactive decay) prior to emplacement in the underground facility. The foregoing conditions do not preclude the construction of storage space to allow retrieval of spent fuel after its emplacement in the underground facility or for the amelioration of emergency conditions associated with the repository’s operation.”

3. Third, to ensure proper coordination between DOE and reactor licensees desirous of sending spent fuel to the repository, **10 C.F.R. § 71.5** should be amended by adding a **new subsection (c)** to read as follows:

No licensee possessing spent reactor fuel may deliver the fuel to the Department of Energy or to a carrier for transport to Yucca Mountain, or transport the fuel to Yucca Mountain, unless the fuel either complies with waste disposal criteria (including thermal loading criteria) approved by the Commission, or the fuel is expected to do so within one year after receipt at the Yucca Mountain Site. In complying with this subsection, a licensee may rely on compliance certifications provided by the Department of Energy.

The proposed rule does not specifically mention DOE’s proposed 21,000 MTHM “Aging Facility.” Nevada believes such a facility is prohibited by the NWPA and, thus, it should and would be excluded by the proposed rule. Nevada suggests that DOE develop a plan for the more limited on-site storage of spent nuclear fuel that is both necessary for repository operations and would be authorized by law. Under the law, spent nuclear fuel cannot be “aged” at Yucca Mountain when it can readily be (and is currently being) “aged” safely elsewhere.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Malsch / n.t.", is written above a horizontal line.

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