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Governor Mike Beebe

Nathaniel Smith, MD, MPH, Director and State Health Officer

December 13, 2013

Secretary
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

ATTN: Rulemakings and Adjudications Staff

Dear Madam Secretary:

The Arkansas Department of Health, Radiation Control Section, has reviewed the Federal Register Notice, Volume 78, Number 178, September 13, 2013, concerning the proposed rule revision for the continued storage of spent nuclear fuel after the cessation of reactor operations and prior to its ultimate disposal. The accompanying Draft Generic Environmental Impact Statement (GEIS), prepared to support the proposed rule change, was also reviewed.

The following comments on the GEIS are offered:

- Power reactor Host States did not envision Long-Term or Indefinite storage of spent nuclear fuel within the State, and the Federal government must assume its responsibility for managing Spent Nuclear Fuel (SNF). The SNF must be permanently disposed of in a geologic repository as recommended by the “Blue Ribbon Commission on America’s Nuclear Future” and supported by the Department of Energy. Consolidated, temporary, interim away-from-reactor storage must be available by the end of the Short-Term period, pending the availability of the geologic repository. Consolidated storage presents an overall safer storage environment and a more economical approach to the storage problem by eliminating significant duplication of costly construction (for example, at-reactor Dry Transfer Systems [DTS]) and staffing that will increase costs. Consolidated Storage will reduce the added burden to State and local governments supporting these long term activities.
- The indefinite period of storage at an Independent Spent Fuel Storage Installation (ISFSI), either at-reactor or away-from-reactor, accomplishes and assures the temporary storage of SNF in the absence of a permanent geologic repository, albeit less than satisfactory. The Federal government must insure the process for

selecting a permanent disposal facility continues as proposed by the Department of Energy, and that a permanent geologic repository is developed, licensed, and becomes operational.

- Much of the GEIS for ISFSI (dry cask storage) is based on previous work and studies performed/sponsored by NRC, DOE, IAEA, EPRI, etc. cited in following references:
 1. DOE 2002, *FEIS for the Disposal of Spent Nuclear Fuel and High-Level Radioactive Waste at Yucca Mountain, Nye County, Nevada*
 2. NRC 2001, *FEIS for the Construction and Operation of an ISFSI on the Reservation of the Skull Valley Band of Goshute Indians and the Related Transportation Facility in Toole County, Utah*
 3. IAEA 2006, *Understanding and Managing Ageing of Materials in Spent Fuel Storage Facilities*
 4. DOE 1996, *Dry Transfer System Topical Safety Analysis Report*
 5. NRC 2000a, *Issuance of Assessment Report for the Dry Transfer System*
 6. NRC 2013a, *GEIS for License Renewal of Nuclear Plants*
 7. INEEL-Bare et al. 2001, *Dry Cask Storage Characterization Project-Phase 1: CASTOR v/21 Cask Opening and Examination*
 8. EPRI 1998 *Data Needs for Long-Term Dry Storage of LWR Fuel*
 9. NRC 2012a *Potential Chloride-Induced Stress Corrosion Cracking of Austenitic Stainless Steel and Maintenance of Dry Cask Storage System Canisters*
 10. NRC 2004b, *EIS for the Proposed Idaho Spent Fuel Facility at the INEEL*

While it is understood that much of the cited work that has formed the basis for the GEIS remains valid, the question must be asked as to whether the science, engineering, and operational experience (if any) has changed or is anticipated to change in the near-term that may possibly cast uncertainty on this basis. As an example, it is understood for purposes of this analysis the NRC “relies on” the facility description of a DTS (DOE 1996) that was reviewed and “the DTS concept” was found to have “merit” by the NRC (NRC 2000a), but was never licensed for operations. Also, some impact assessments contained in the GEIS were taken from the INEEL EIS (NRC 2004b), a facility that was eventually licensed by the NRC, but was never constructed, and thus no operational experience was available. It would seem that design engineering improvements or revisions would have certainly been made over time that may have revised the impact evaluation.

- The prediction of continued safe storage is probably acceptable for the Short-Term storage (60 years). However, is it reasonable to rely on relatively short actual storage experience to predict Long-Term (100 years) or Indefinite safe storage (even with aging management programs), given the findings of indicators of potential concerns cited in the GEIS (i.e., “chloride-induced stress corrosion cracking of austenitic stainless steel and maintenance of dry cask storage system canisters [NRC 2012b] and the “potential effects of hydride reorientation on

cladding behavior [Billone et al. 2013]? Have indications of other potential radiation induced embrittlement issues been identified and/or studied? Will the aging management inspections and required corrective actions that are currently performed in Spent Fuel Pools also be performed at on-site Dry Transfer Systems? How will these corrective actions impact certain Chapters of the GEIS, for example Public and Occupational Health?

Additional details describing the projected, long-term, required aging management program using the DTS and its impact must be included in the GEIS. The program must address potential, long-term concerns that may result from long-term storage.

- During the Long-Term and Indefinite periods, Low Level Radioactive Waste (LLRW) will be generated on site during the repackaging of SNF, including the SNF canisters. Several references are made that waste would be processed by compaction, again including the replaced storage canisters. Temporary on-site storage of the waste is not addressed, nor is there any discussion of the waste compaction activities that will be performed, by either site personnel or contractors. The GEIS assumes “Sufficient LLW disposal capacity will be made available when needed.” However, given the failures of some of the proposed compacts, and the time it takes to develop and license a new disposal site, the required LLRW capacity may not be as “available when needed” as stated and the waste would have to be stored on-site, which is less than satisfactory, and will continue to be an added burden to State and local governments.

Additional details describing the on-site LLRW program must be included in the GEIS. The description must address temporary on-site LLRW storage, on-site compaction of LLRW including the SNF canisters, and the mandatory alternative actions that will be taken in the event permanent LLRW disposal facilities are not available when needed. Public and Occupational Health impact must also be reassessed in connection with an expanded description of the LLRW on-site activities

Additional Issues for Public Comment

- Issue 1.* The Department believes the specific policy statements regarding the timeline for repository availability should remain in the rule because the availability of a repository is the most critical issue affecting long term dry cask storage at-reactor or away-from reactor. The inclusion of the statements in the rule indicates the importance the Commission places on this key assumption of the GEIS. As reflected in the above comments, the Department believes geologic repository disposal provides permanency, control, and overall radiation safety.
- Issue 2.* The Department does not believe it is necessary to include specific policy statements in the rule addressing continued spent fuel storage, given the

proposed wording of Paragraph 51.23(a)(2). It seems this wording sufficiently states the Commission's "policy" on continued spent fuel storage.

Issue 3. The Department agrees the Discussion portion of the Statement of Consideration should be "streamlined" to avoid unnecessary duplication.

Issue 4. The Department believes the title of the rule should be changed to accurately reflect the purpose of the analysis, evaluation, and conclusions of the study of continued storage of spent nuclear fuel. It is no longer a Waste Confidence Decision.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Bernard Bevil". The signature is written in a cursive style with a large, looped initial "B".

Bernard Bevil, Section Chief
Radiation Control Program

Copy: Jared Thompson, Program Manager
Radioactive Materials Program