

NUCLEAR REGULATORY COMMISSION

[Docket 72-16]

Environmental Assessment and Finding of No Significant Impact Related to Virginia Electric and Power Company's Proposed Amendment to License No. SNM-2507

The U.S. Nuclear Regulatory Commission (NRC or Commission) is considering issuance of an amendment, pursuant to 10 CFR 72.56, to Special Nuclear Material License No. 2507 (SNM-2507) held by Virginia Electric and Power Company (Dominion) for the North Anna independent spent fuel storage installation (ISFSI). The requested amendment would revise the Technical Specifications (TS) of SNM-2507 to specifically permit the use of the TN-32 storage cask to store spent fuel with a higher initial enrichment and burnup than currently specified in the TS for the North Anna ISFSI. An environmental assessment (EA) was performed by the NRC staff in support of its review of the license amendment request, in accordance with the requirements of 10 CFR part 51. The conclusion of the EA is a Finding of No Significant Impact (FONSI).

Environmental Assessment

Identification of Proposed Action: By letter dated May 28, 2002, as supplemented, Dominion requested an amendment to revise the TS of SNM-2507 for the North Anna ISFSI. The changes would specifically permit the use of the TN-32 storage cask to store spent fuel with a higher initial enrichment and burnup than currently specified in the TS. Currently, the TS for the North Anna ISFSI limit the fuel to be stored in the TN-32 to the following: initial enrichment of $\leq 3.85\%$ (wt U-235), assembly average burnup of $\leq 40,000$ MWD/MTU, and heat generation of ≤ 0.847 Kw/assembly. This amendment requests the limits be amended as follows: initial enrichment of $\leq 4.35\%$ (wt U-235), assembly average burnup $\leq 45,000$ MWD/MTU, and heat generation of ≤ 1.02 Kw/assembly.

Need for the Proposed Action: The proposed action is necessary to allow continued storage of spent fuel in dry casks at the North Anna ISFSI. Without this amendment, North Anna will be unable to load spent fuel in TN-32 casks because the remaining spent fuel at the site has the higher enrichment and burnup. If unable to store spent fuel in TN-32 casks, North Anna will not be able to retain full core offload capability. North Anna would

eventually have to find an alternate means to store fuel, or shut down.

Environmental Impacts of the Proposed Action: The NRC has completed its evaluation of the proposed action and concludes that granting the request for amendment to allow the storage of spent fuel assemblies with burnup and initial enrichment of up to 45,000 MWD/MTU and 4.35% (wt U-235), respectively, in TN-32 casks used at the North Anna ISFSI, will not increase the probability or consequence of accidents beyond that bounded by previous analysis. No changes are being made in the types of any effluents that may be released offsite. With regard to radiological impacts, the addition of higher burnup and initial enrichment spent fuel assemblies was calculated to yield an average surface dose rate of 218 mrem/hour at the TN-32 cask side surface. A re-evaluation of occupational doses based on actual operating experience and the revised surface dose rate, indicates that the overall exposure to workers during cask loading, transport, and emplacement will increase from the original estimate of 7.19 person-rem to 14.30 person-rem. The dose to the nearest permanent resident due to ISFSI operations was calculated to be 2.10 mrem/yr. If the proposed amendment is approved, the total annual dose for all site sources (ISFSI, Unit 1 and Unit 2) would be 5.10 mrem/yr. This is well below the 25 mrem/yr limit cited in 10 CFR 72.104(a). Based on the occupational and public dose analysis results, there are no significant radiological environmental impacts associated with the proposed action.

The amendment only affects the requirements associated with the contents of the casks and does not affect non-radiological plant effluents or any other aspects of the environment. Therefore, there are no significant non-radiological environmental impacts associated with the proposed action.

Accordingly, the Commission concludes that there are no significant environmental impacts associated with the proposed action.

Environmental Impact of the Alternative to the Proposed Action: The alternative to the proposed action would be to deny the request for amendment (i.e., the "no-action" alternative). Denial of the proposed action would result in North Anna having to store its remaining spent fuel in the spent fuel pool. Without dry cask storage, North Anna would lose the capability to maintain full core offload and eventually both units would have to shut down due to lack of storage space. The electrical generating capacity lost

would have to be replaced by another source of power, which could result in greater environmental impact and/or higher electricity rates for customers. Increased storage in the spent fuel pool could potentially lead to greater occupational exposure than dry cask storage due to the proximity of workers to the fuel. The environmental impacts of the alternative action could be greater than the proposed action.

Given that the alternative action of denying the approval for the amendment has no lesser environmental impacts associated with it, the Commission concludes that the preferred alternative is to grant this amendment.

Agencies and Persons Consulted and Sources Used: On April 9, 2003, Mr. Les Foldese of the Virginia Department of Health, Radiological Health Programs, was contacted regarding the proposed action and had no concerns. The NRC staff have determined that the proposed amendment will not introduce any new effects on listed species, critical habitat, or historical properties. Therefore no further consultation is required. 10 CFR part 51 was used as a source.

Finding of No Significant Impact

The environmental impacts of the proposed action have been reviewed in accordance with the requirements set forth in 10 CFR part 51. Based upon the foregoing Environmental Assessment, the Commission finds that the proposed action of granting an amendment to permit the use of the TN-32 dry storage casks to store spent fuel with a higher initial enrichment ($\leq 4.35\%$ wt U-235) and burnup ($\leq 45,000$ MWD/MTU) at the North Anna ISFSI will not significantly impact the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed amendment.

The request for the amendment was docketed under 10 CFR part 72, Docket 72-16. For further details with respect to this action, see the amendment application dated May 28, 2002, as supplemented, which is available for public inspection at the Commission's Public Document Room, One White Flint North Building, 11555 Rockville Pike, Rockville, MD or from the publicly available records component of NRC's Agencywide Documents Access and Management System (ADAMS). The NRC maintains ADAMS, which provides text and image files of NRC's public documents. These documents may be accessed through the NRC's Public Electronic Reading Room on the Internet at <http://www.nrc.gov/reading-rm/adams.html>.