

ENVIRONMENTAL ASSESSMENT AND FINDING OF
NO SIGNIFICANT IMPACT
ON
PROPOSED AMENDMENT TO 10 CFR PART 72
“LIST OF APPROVED SPENT FUEL STORAGE CASKS: TN-68 REVISION 1”

Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission (NRC)
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I. THE PROPOSED ACTION

The proposed action is to amend 10 CFR 72.214 to revise the Transnuclear, Inc. TN-68 cask system listing within the “List of approved spent fuel storage casks” to include Amendment No. 1 to the Certificate of Compliance (CoC) No. 1027. Amendment No. 1 would modify the present cask system CoC by revising the Technical Specifications to change several fuel parameters that include increasing fuel burnup to 60 gigawatts-day/metric ton of uranium (GWd/MTU), increasing total cask decay heat to 30 kilowatts (kW), increasing maximum average fuel enrichment to 4.7 weight percent uranium-235, and decreasing minimum fuel assembly cooling time to 7 years. The amendment would also add up to eight damaged fuel assemblies as authorized contents of the cask and reduce the cask spacing on the storage pad. The TN-68 cask system can be relied on to provide safe confinement of spent fuel at any reactor site when used in accordance with the conditions and technical specifications of CoC No. 1027.

II. THE NEED FOR THE PROPOSED ACTION

This rulemaking is needed to revise a cask system listing within the “List of approved spent fuel storage casks” in 10 CFR 72.214. On January 14, 2005, and as supplemented on July 15 and November 15, 2005; September 22 and December 8, 2006; and February 22, March 16, and March 23, 2007; the certificate holder, Transnuclear, Inc. (TN), submitted an application to the NRC that requested revisions to several fuel parameters that included increasing fuel burnup to 60 GWd/MTU, increasing total cask decay heat to 30 kW, increasing maximum average fuel enrichment to 4.7 weight percent uranium-235, and decreasing minimum fuel assembly cooling time to 7 years. The application also requested adding up to eight damaged fuel assemblies as authorized contents of the cask and reducing the cask spacing on the storage pad. No other changes to the TN-68 cask design were requested in this application. The NRC staff performed a detailed safety evaluation of the proposed CoC amendment request and found that an acceptable safety margin is maintained.

III. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The potential environmental impact of using the TN-68 system was initially analyzed in the environmental assessment for the final rule to add the TN-68 system to the list of approved spent fuel storage casks in 10 CFR 72.214 (65 FR 24855; April 28, 2000). The environmental assessment for the April 28, 2000, final rule concluded that there would be no significant environmental impact to adding the TN-68 system, and therefore, the NRC issued a finding of no significant impact (FONSI), which continues to be valid. The instant environmental assessment, for this Amendment No. 1, tiers on the environmental assessment for the April 28,

2000, final rule. Tiering on past environmental assessments is a standard process under NEPA.

TN-68 casks are designed to mitigate the effects of design basis accidents that could occur during storage. Design basis accidents account for human-induced events and the most severe natural phenomena reported for the site and surrounding area. Postulated accidents analyzed for an independent spent fuel storage installation (ISFSI), the type of facility at which a holder of a power reactor operating license would store spent fuel in casks in accordance with 10 CFR Part 72, include tornado winds and tornado-generated missiles, a design basis earthquake, a design basis flood, an accidental cask drop, lightning effects, fire, explosions, and other incidents.

Considering the specific design requirements for each accident condition, the design of the cask would prevent loss of containment, shielding, and criticality control. Without the loss of either containment, shielding, or criticality control, the risk to public health and safety is not compromised. The NRC staff performed a detailed safety evaluation of the proposed CoC amendment request and found that an acceptable safety margin is maintained, that the proposed changes provide reasonable assurance that the spent fuel can be stored safely and meet the acceptance criteria specified in 10 CFR Part 72, and that there continues to be reasonable assurance that public health and safety will be adequately protected.

The staff documented its findings in a safety evaluation report which is available electronically via the NRC's Electronic Reading Room at <http://www.nrc.gov/NRC/ADAMS/index.html>. From this site, the public can gain entry into the NRC's Agencywide Document Access and Management System (ADAMS), which provides text and image files of NRC's public documents. The safety evaluation report for Amendment No. 1 can be found under ADAMS Accession No. ML071210018.

Any resulting increase in either occupational exposure or offsite dose rates would remain well within the 10 CFR Part 20 limits. Therefore, the proposed action now under consideration would not change the potential effects analyzed in the environmental assessment for the April 28, 2000, final rule. Thus, the NRC staff has determined that an acceptable safety margin is maintained and that there will be no significant effect on the human environment as a result of the NRC approving Amendment No. 1.

IV. ALTERNATIVE TO THE PROPOSED ACTION

The alternative to this action is to withhold approval of Amendment No. 1 and to require any Part 72 general licensee, seeking to load spent fuel into TN-68 casks under Amendment No. 1, to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, each interested Part 72 licensee would have to prepare, and the NRC would have to review, a separate exemption request, thereby increasing the administrative burden upon the NRC and the costs to each licensee.

V. ALTERNATIVE USE OF RESOURCES

There were no irreversible commitments of resources determined in this assessment.

VI. AGENCIES AND PERSONS CONTACTED

No agencies or persons outside the NRC were contacted in connection with the preparation of this environmental assessment.

VII. FINDING OF NO SIGNIFICANT IMPACT

The environmental impacts of the proposed action have been reviewed under the requirements in 10 CFR Part 51.

Based on the foregoing environmental assessment, the NRC concludes that this rulemaking entitled “List of Approved Spent Fuel Storage Casks: TN-68 Revision 1” will not have a significant effect on the human environment. Therefore, the NRC has determined that an environmental impact statement is not necessary for this rule.

Certain documents related to this rulemaking, including comments received by the NRC, may be examined at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD. These same documents may also be viewed and downloaded electronically via the rulemaking website (<http://ruleforum.llnl.gov>).