

ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT

ON

PROPOSED AMENDMENT TO 10 CFR PART 72

“LIST OF APPROVED SPENT FUEL STORAGE CASKS: STANDARDIZED NUHOMS®-24P, -  
52B, -61BT, -32PT, AND 24-PHB REVISION”

Office of Nuclear Material Safety and Safeguards

U.S. Nuclear Regulatory Commission (NRC)

July 2003

I. THE PROPOSED ACTION

The proposed action is to amend 10 CFR Part 72 to revise the Transnuclear, Inc., Standardized NUHOMS® Horizontal Modular Storage System (Standardized NUHOMS® System) listing within the “List of Approved Spent Fuel Storage Casks” to include Amendment No. 6 in Certificate of Compliance (CoC) Number 1004. Amendment No. 6 will add the NUHOMS®-24PHB cask design to the Standardized NUHOMS® System. The NUHOMS®-24PHB cask design will permit a Part 72 licensee to store high burnup Babcock & Wilcox (B&W) 15x15 spent fuel assemblies with an average burnup of up to 55,000 megawatt-days (MWd)/metric ton of uranium (MTU); enrichment equal to 4.5 weight percent U-235; maximum decay heat load of 1.3 kilowatt (kW) per assembly; and maximum heat load of 24 kW per cask, under a general license. The cask can be relied on to provide safe confinement of spent fuel at any reactor site when used in accordance with the CoC. To use an NRC-approved cask system, the reactor licensee must ensure that the reactor site parameters

and potential site-boundary doses are within the scope of the cask system safety analysis report and reactor license.

## 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 August 31, 2001, and as supplemented June 13, 2002, November 18, 2002, and March 7, 2003, the certificate holder (Transnuclear, Inc.) submitted an application to the NRC to amend CoC No. 1004 to add the NUHOMS®-24PHB cask design to the Standardized NUHOMS® System. The amendment will permit a Part 72 licensee to use the NUHOMS®-24PHB cask design to store high burnup B&W 15x15 spent fuel assemblies with an average burnup of up to 55,000 MWd/MTU; enrichment equal to 4.5 weight percent U-235; maximum decay heat load of 1.3 kW per assembly; and maximum heat load of 24 kW per cask, under a general license. No other changes to the Standardized NUHOMS® System were requested in this application. The staff performed a detailed safety evaluation of the proposed CoC amendment request and found that an acceptable safety margin is maintained. In addition, the staff has determined that there is still reasonable assurance that public health and safety and the environment will be adequately protected.

## III. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The potential environmental impact of using the Standardized NUHOMS® System was initially presented in the Environmental Assessment for the final rule to add the Standardized NUHOMS® System (NUHOMS®-24P and -52B) to the list of approved spent fuel storage casks

in 10 CFR 72.214 (59 FR 65920; December 22, 1994). Amendments 3 and 5, respectively, added the cask models -61BT and -32PT to the Standardized NUHOMS® System.

Furthermore, each general licensee must assess the environmental impacts of the specific Independent Spent Fuel Storage Installation (ISFSI) in accordance with the requirements of 10 CFR 72.212(b)(2)(iii). This section requires the general licensee to perform written evaluations demonstrating compliance with the environmental requirements of 10 CFR 72.104, “Criteria for radioactive materials in effluents and direct radiation from an ISFSI or MRS (Monitored Retrievable Storage Installation).”

The Standardized NUHOMS® System is 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 ISFSI include tornado winds and tornado generated missiles, design basis earthquake, design basis flood, 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 staff reviewed the proposed changes and confirmed that the changes provide reasonable assurance that the spent fuel can be stored safely and that the changes meet the acceptance criteria specified in 10 CFR Part 72. The staff documented its findings in a Safety Evaluation Report.

The occupational exposure is not significantly increased, and offsite dose rates remain well within the 10 CFR Part 20 limits. Therefore, the proposed action now under consideration would not change the potential environmental effects assessed in the initial rulemaking.

Therefore, the NRC staff has determined that an acceptable safety margin is maintained and that no significant environmental impacts occur as a result of the amendment. Because the proposed changes will not change the environmental requirements for the storage of spent fuel, no change in environmental impact is anticipated.

#### IV. ALTERNATIVE TO THE PROPOSED ACTION

The alternative to the proposed action would be to deny approval of the amendment.

#### 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 in accordance with the requirements set forth 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: Standardized NUHOMS®-24P, -52B, -61BT, -32PT, and -24PHB revision" will not have a significant

incremental effect on the quality of 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>).