

ENVIRONMENTAL ASSESSMENT AND FINDING OF  
NO SIGNIFICANT IMPACT  
ON  
PROPOSED AMENDMENT TO 10 CFR PART 72  
“LIST OF APPROVED SPENT FUEL STORAGE CASKS:  
MAGNASTOR<sup>®</sup> SYSTEM, REVISION 2”

Office of Federal and State Materials and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
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I. THE PROPOSED ACTION

The proposed action is to amend Title 10 of the *Code of Federal Regulations* (10 CFR) 72.214 to revise the NAC International Inc. (NAC) MAGNASTOR<sup>®</sup> System listing within the “List of Approved Spent Fuel Storage Casks” to include Amendment No. 2 to the Certificate of Compliance (CoC) No. 1031. Amendment No. 2 would allow the addition of various boron-10 (<sup>10</sup>B) areal densities for use with Pressurized Water Reactor (PWR) and Boiling Water Reactor (BWR) baskets in Technical Specification (TS) 4.1.1; correction of the code reference in Table 2.1-2 of the Final Safety Analysis Report (FSAR), table entitled “ASME Code Alternatives for MAGNASTOR<sup>®</sup> components”; reduction of transportable storage canister surface contamination limits for loose contamination in TS 3.3.2; replacement of the fuel tube orthogonal pitch with the minimum fuel tube outer diagonal dimension in TS 4.1.1; and other changes in Appendices A and B of the TS to incorporate minor editorial corrections.

## 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 March 22, 2010, and as supplemented on March 30, March 31, June 8, July 1, November 10, and November 19, 2010, April 22 and May 17, 2011, NAC, the holder of CoC No. 1031, submitted an application to the NRC that requested an amendment to CoC No. 1031. The amendment would allow the addition of various boron-10 ( $^{10}\text{B}$ ) areal densities for use with PWR and BWR baskets in TS 4.1.1 which will maintain criticality safety; correction of the code reference in Table 2.1-2 of the FSAR, table entitled “ASME Code Alternatives for MAGNASTOR<sup>®</sup> components”; reduction of transportable storage canister surface contamination limits for loose contamination in TS 3.3.2; replacement of the fuel tube orthogonal pitch with the minimum fuel tube outer diagonal dimension to allow for measurement of parameters used in criticality control in TS 4.1.1; and other changes in Appendices A and B of the TS to incorporate minor editorial corrections.

## III. ENVIRONMENTAL IMPACTS OF PROPOSED ACTION

The potential environmental impact of using the MAGNASTOR<sup>®</sup> System was initially analyzed in the environmental assessment for the final rule to add the MAGNASTOR<sup>®</sup> System to the list of approved spent fuel storage casks in 10 CFR 72.214 (73 FR 70587; November 21, 2008). The environmental assessment for the November 21, 2008, final rule concluded that there would be no significant environmental impact for adding the MAGNASTOR<sup>®</sup> System, and therefore, the NRC issued a finding of no significant impact. The instant environmental assessment, for this Amendment No. 2, tiers on the environmental

assessment for the November 21, 2008, final rule. Tiering on past environmental assessments is a standard process under the National Environmental Policy Act.

MAGNASTOR<sup>®</sup> System 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, 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 cask is designed to prevent loss of containment, shielding, and criticality control. If there is no loss of containment, shielding, or criticality control, the environmental impacts would be insignificant.

The addition of various boron-10 (<sup>10</sup>B) areal densities for use with PWR and BWR baskets; correction of the code reference in Table 2.1-2 of the FSAR, reduction of transportable storage canister surface contamination limits for loose contamination; replacement of the fuel tube orthogonal pitch with the minimum fuel tube outer diagonal dimension; and other minor editorial corrections do not authorize or otherwise reflect a significant change in design or fabrication of the cask. There are no significant changes to cask design requirements in the proposed CoC amendment. In addition, any resulting occupational exposure or offsite dose rates from the implementation of Amendment No. 2 would remain well within the 10 CFR Part 20 limits. Thus, the proposed CoC changes will not result in any radiological or non-radiological environmental impacts that significantly differ from the environmental impacts evaluated in the environmental assessment of the November 21, 2008, final rule.

There will be no significant change in the probability or consequences of accidental releases of radioactive materials, no significant increase in the individual or cumulative radiation exposure, and no significant increase in the potential for or consequences from radiological accidents. Therefore, the NRC staff has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in Subpart A of 10 CFR Part 51 that this rule is not a major federal action significantly affecting the quality of the human environment and therefore, an environmental impact statement is not required.

The staff documented its findings in a safety evaluation report (SER) which is available electronically via the NRC's Electronic Reading Room at: <http://www.nrc.gov/NRC/ADAMS/index.html>. On this website, 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 SER for Amendment No. 2 can be found under ADAMS Accession Number ML103300196.

#### IV. ALTERNATIVE TO THE PROPOSED ACTION

The alternative to this action is to deny approval of Amendment No. 2 and end the proposed rulemaking. Consequently, any Part 72 general licensee that seeks to load spent nuclear fuel into MAGNASTOR<sup>®</sup> System casks in accordance with the changes described in proposed Amendment No. 2 would have to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, interested licensees 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. Thus, the environmental impacts would be the same or less than the proposed action.

## V. ALTERNATIVE USE OF RESOURCES

Approval of Amendment No. 2 to CoC No. 1031 would result in no irreversible commitments of resources.

## 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: MAGNASTOR<sup>®</sup> System Revision 2" 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, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland.