



[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Part 72

RIN 3150-AJ22

[NRC-2012-0308]

List of Approved Spent Fuel Storage Casks: MAGNASTOR[®] System

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is amending its spent fuel storage regulations by revising the NAC International, Inc. (NAC) Modular Advanced Generation Nuclear All-purpose Storage (MAGNASTOR[®]) Cask System listing within the "List of Approved Spent Fuel Storage Casks" to include Amendment No. 3 to Certificate of Compliance (CoC) No. 1031. Amendment No. 3 revises authorized contents to include: pressurized water reactor (PWR) damaged fuel contained in damaged fuel cans that are placed in a damaged fuel basket assembly; PWR fuel assemblies with nonfuel hardware per the expanded definition in the Amendment No. 3 application; and PWR fuel assemblies with up to five activated stainless steel fuel replacement rods at a maximum burnup/exposure of 32.5 gigawatt days per metric ton of uranium (GWd/MTU). Additionally, Amendment No. 3 revises paragraph 4.3.1(i) in Appendix A of the CoC Technical Specifications (TS) to clarify that the maximum design basis earthquake accelerations of 0.37g in the horizontal direction (without cask sliding) and 0.25g in the vertical direction at the independent spent fuel storage installation (ISFSI) pad top surface do not result

in cask tip-over. Amendment No. 3 also makes additional changes to Appendix A, Technical Specifications and Design Features for the MAGNASTOR[®] System, and Appendix B, Approved Contents for the MAGNASTOR[®] System, of the CoC.

DATES: The final rule is effective **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Please refer to Docket ID NRC-2012-0308 when contacting the NRC about the availability of information for this final rule. You may access information and comment submittals related to this final rulemaking, which the NRC possesses and is publicly available by any of the following methods:

- **Federal Rulemaking Web site:** Go to <http://www.regulations.gov> and search for Docket ID NRC-2012-0308. Address questions about NRC dockets to Carol Gallagher; telephone: 301-492-3668; e-mail: Carol.Gallagher@nrc.gov. For technical questions, contact the individuals listed in the FOR FURTHER INFORMATION CONTACT section of this final rule.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may access publicly available documents online in the NRC Library at <http://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "ADAMS Public Documents" and then select "[Begin Web-based ADAMS Search.](#)" For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to pdr.resource@nrc.gov. An electronic copy of the CoC, including Appendices A and B of the CoC, and the safety evaluation report (SER) can be found in ADAMS under Package Accession No. ML13120A254. The ADAMS Accession No. for the

MAGNASTOR[®] Cask System Amendment No. 3 application dated August 26, 2010, is

ML102420569.

- **NRC's PDR:** You may examine and purchase copies of public documents at the NRC's PDR, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

FOR FURTHER INFORMATION CONTACT: Naiem S. Tanious, Office of Federal and State Materials and Environmental Management Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-6103, e-mail: Naiem.Tanious@nrc.gov.

SUPPLEMENTARY INFORMATION:

- I. Background.
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- V. Agreement State Compatibility.
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I. Background.

Section 218(a) of the Nuclear Waste Policy Act (NWPA) of 1982, as amended, requires that "the Secretary [of the Department of Energy] shall establish a demonstration program, in cooperation with the private sector, for the dry storage of spent nuclear fuel at civilian nuclear power reactor sites, with the objective of establishing one or more technologies that the [Nuclear Regulatory] Commission may, by rule, approve for use at the sites of civilian nuclear power reactors without, to the maximum extent practicable, the need for additional

site-specific approvals by the Commission.” Section 133 of the NWPA states, in part, that “[the Commission] shall, by rule, establish procedures for the licensing of any technology approved by the Commission under Section 219(a) [sic: 218(a)] for use at the site of any civilian nuclear power reactor.”

To implement this mandate, the Commission approved dry storage of spent nuclear fuel in NRC-approved casks under a general license by publishing a final rule in part 72 of Title 10 of the *Code of Federal Regulations* (10 CFR), which added a new subpart K within 10 CFR part 72 entitled, “General License for Storage of Spent Fuel at Power Reactor Sites” (55 FR 29181; July 18, 1990). This rule also established a new subpart L within 10 CFR part 72 entitled, “Approval of Spent Fuel Storage Casks,” which contains procedures and criteria for obtaining NRC approval of spent fuel storage cask designs. The NRC subsequently issued a final rule on November 21, 2008 (73 FR 70587), that approved the MAGNASTOR[®] Cask System design and added it to the list of NRC-approved cask designs in 10 CFR 72.214 as CoC No. 1031.

This rule is limited to the changes contained in Amendment No. 3 to CoC No. 1031 and does not include other aspects of the MAGNASTOR[®] Cask System design.

The NRC published in the *Federal Register* on March 18, 2013 (78 FR 16601), a direct final rule on this amendment. The NRC also concurrently published a companion proposed rule on March 18, 2013 (78 FR 16619). The NRC received a significant adverse comment on the proposed rule; therefore, the NRC withdrew the direct final rule on May 29, 2013 (78 FR 32077), and is proceeding, in this document, to address the comment on the companion proposed rule (see Section III, Analysis of Public Comments, of this document).

II. Discussion of Changes.

On August 26, 2010, NAC submitted a request to the NRC to amend CoC No. 1031. NAC supplemented its request on the following dates: February 4, 2011 (ADAMS Accession No. ML11138A224), February 16, 2011 (ADAMS Accession No. ML110480498), August 15, 2011 (ADAMS Accession No. ML11229A701), October 3, 2011 (ADAMS Accession No. ML11287A020), March 21, 2012 (ADAMS Accession No. ML120820463), March 30, 2012 (ADAMS Accession No. ML12094A056), April 6, 2012 (ADAMS Accession No. ML12104A025), and April 22, 2013 (ADAMS Accession No. ML13114A137). The amendment revises authorized contents to include: 1) PWR damaged fuel contained in damaged fuel cans that are placed in a damaged fuel basket assembly; 2) PWR fuel assemblies with nonfuel hardware per the expanded definition in the Amendment No. 3 application; and 3) PWR fuel assemblies with up to five activated stainless steel fuel replacement rods at a maximum burnup/exposure of 32.5 GWd/MTU.

This amendment also revises paragraph 4.3.1(i) in Appendix A of the CoC TSs to clarify that the maximum design basis earthquake accelerations of 0.37g in the horizontal direction (without cask sliding) and 0.25g in the vertical direction at the ISFSI pad top surface do not result in cask tip-over. Furthermore, this amendment makes additional changes to Appendix A (ADAMS Accession No. ML13150A388) and Appendix B (ADAMS Accession No. ML13120A264) of the CoC. The changes to the aforementioned documents are identified with revision bars in the margin of each document.

As documented in the SER (ADAMS Accession No. ML13120A262), the NRC staff performed a detailed safety evaluation of the proposed CoC amendment request. There are no significant changes to cask design requirements in the CoC amendment. Considering the specific design requirements for each accident condition, the design of the cask would 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. This

amendment does not reflect a significant change in design or fabrication of the cask. In addition, any resulting occupational exposure or offsite dose rates from the implementation of Amendment No. 3 would remain well within the 10 CFR part 20 limits. Thus, the 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 supporting the November 21, 2008, final rule. There will be no significant change in the types or significant revisions in the amounts of any effluent released, no significant increase in the individual or cumulative radiation exposure, and no significant increase in the potential for or consequences from radiological accidents.

This final rule revises the MAGNASTOR[®] Cask System listing in 10 CFR 72.214 by adding Amendment No. 3 to CoC No. 1031. The amendment consists of the changes previously described, as set forth in the revised CoC and TSs. The revised TSs are identified in the SER.

The amended MAGNASTOR[®] Cask System design, when used under the conditions specified in the CoC, the TSs, and the NRC's regulations, will meet the requirements of 10 CFR part 72; thus, adequate protection of public health and safety will continue to be ensured. When this final rule becomes effective, persons who hold a general license under 10 CFR 72.210 may load spent nuclear fuel into MAGNASTOR[®] Cask Systems that meet the criteria of Amendment No. 3 to CoC No. 1031 under 10 CFR 72.212.

III. Analysis of Public Comments.

The NRC received one comment on the companion proposed rule to the direct final rule published on March 18, 2013. The comment was submitted by NAC on April 17, 2013 (ADAMS

Accession No. ML13114A137). The public comment and the NRC's response is provided in the following paragraphs.

Comment. NAC's comment identified several corrections that needed to be made in the NRC's proposed TSs. Specifically, the corrections include:

- Modification of Table B2-4 "Bounding PWR Fuel Assembly Loading Criteria – Enrichment/Soluble Boron Limits" to include two sections; revision of the upper section title to "TSC [Transportable Storage Cannister] with Undamaged PWR Fuel Basket Assembly Max. Initial Enrichment (wt% ²³⁵U [uranium-235])" from "Max. Initial Enrichment (wt% ²³⁵U)." The bottom section is titled "TSC with Damaged PWR Fuel Basket Assembly Max. Initial Enrichment (wt% ²³⁵U)."

- For the upper section of the revised table, the first five entries starting from the top of column 3, which is for an absorber with 0.036 boron-10 grams per cubic centimeter and a soluble boron concentration of 2000 parts per million, have been corrected. The values are revised from 4.0 percent to the values presented in Table 6.7.3-11 "PWR System Generic Load Limits (0.036 10B g/cm² Absorber)" of Revision 4 of the MAGNASTOR[®] Final Safety Analysis Report (FSAR).

- The bottom section of the revised table contains the maximum initial enrichment values presented in the MAGNASTOR[®] Amendment No. 3 submittal, FSAR version 10B, changed page 6.7.8-90, Table 6.7.8-10.

Response. The NRC agrees with NAC's corrections. The corrections have been made in CoC No. 1031, Amendment No. 3, Appendix B, and the SER for this final rule.

IV. Voluntary Consensus Standards.

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113)

requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this final rule, the NRC will revise the MAGNASTOR[®] Cask System design listed in § 72.214, List of Approved Spent Fuel Storage Casks. This action does not constitute the establishment of a standard that contains generally applicable requirements.

V. Agreement State Compatibility.

Under the “Policy Statement on Adequacy and Compatibility of Agreement State Programs” approved by the Commission on June 30, 1997, and published in the *Federal Register* on September 3, 1997 (62 FR 46517), this rule is classified as Compatibility Category “NRC.” Compatibility is not required for Category “NRC” regulations. The NRC program elements in this category are those that relate directly to areas of regulation reserved to the NRC by the Atomic Energy Act of 1954, as amended, or the provisions of 10 CFR. Although an Agreement State may not adopt program elements reserved to the NRC, it may wish to inform its licensees of certain requirements via a mechanism that is consistent with the particular State’s administrative procedure laws, but does not confer regulatory authority on the State.

VI. Plain Writing.

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum “Plain Language in Government Writing,” published June 10, 1998 (63 FR 31883).

VII. Finding of No Significant Environmental Impact: Availability.

Under the National Environmental Policy Act of 1969, as amended, and the NRC regulations in subpart A of 10 CFR part 51, the NRC has determined that this rule, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required. The NRC has prepared an environmental assessment (ADAMS Accession No. ML13151A152) and, on the basis of this environmental assessment, has made a finding of no significant impact. This rule amends the CoC for the MAGNASTOR[®] Cask System design within the list of approved spent fuel storage casks that power reactor licensees can use to store spent fuel at reactor sites under a general license. Specifically, NAC requested changes to revise authorized contents to include: 1) PWR damaged fuel contained in damaged fuel cans that are placed in a damaged fuel basket assembly; 2) PWR fuel assemblies with nonfuel hardware per the expanded definition in the Amendment No. 3 application; and 3) PWR fuel assemblies with up to five activated stainless steel fuel replacement rods at a maximum burnup/exposure of 32.5 GWd/MTU.

This amendment also revises paragraph 4.3.1(i) in Appendix A of the CoC TSs to clarify that the maximum design basis earthquake accelerations of 0.37g in the horizontal direction (without cask sliding) and 0.25g in the vertical direction at the ISFSI pad top surface do not result in cask tip-over. Furthermore, this amendment makes additional changes to Appendix A and Appendix B of the CoC. The changes to the aforementioned documents are identified with revision bars in the margin of each document.

The environmental assessment and finding of no significant impact on which this determination is based are available for inspection at the NRC's PDR, Room O-1F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. Single copies of the

environmental assessment and finding of no significant impact are available from the individual listed in the FOR FURTHER INFORMATION CONTACT section of this document.

VIII. Paperwork Reduction Act Statement.

This rule does not contain any information collection requirements and, therefore, is not subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget (OMB), Approval Number 3150-0132.

Public Protection Notification.

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

IX. Regulatory Analysis.

On July 18, 1990 (55 FR 29181), the NRC issued an amendment to 10 CFR part 72 to provide for the storage of spent nuclear fuel under a general license in cask designs approved by the NRC. Any nuclear power reactor licensee can use NRC-approved cask designs to store spent nuclear fuel if it notifies the NRC in advance, the spent fuel is stored under the conditions specified in the cask's CoC, and the conditions of the general license are met. A list of NRC-approved cask designs is contained in 10 CFR 72.214. On November 21, 2008 (73 FR 70587), the NRC issued an amendment to 10 CFR part 72 that approved the MAGNASTOR® Cask

System design by adding it to the list of NRC-approved cask designs in 10 CFR 72.214.

On August 26, 2010, and as supplemented on February 4, 2011, February 16, 2011, August 15, 2011, October 3, 2011, March 21, 2012, March 30, 2012, April 6, 2012, and April 22, 2013, NAC submitted an application to amend the MAGNASTOR[®] Cask System. The amendment revises authorized contents to include: 1) PWR damaged fuel contained in damaged fuel cans that are placed in a damaged fuel basket assembly; 2) PWR fuel assemblies with nonfuel hardware per the expanded definition in the Amendment No. 3 application; and 3) PWR fuel assemblies with up to five activated stainless steel fuel replacement rods at a maximum burnup/exposure of 32.5 GWd/MTU.

This amendment also revises paragraph 4.3.1(i) in Appendix A of the CoC TSs to clarify that the maximum design basis earthquake accelerations of 0.37g in the horizontal direction (without cask sliding) and 0.25g in the vertical direction at the ISFSI pad top surface do not result in cask tip-over. Furthermore, this amendment makes additional changes to Appendix A and Appendix B of the CoC. The changes to the aforementioned documents are identified with revision bars in the margin of each document.

The alternative to this action is to withhold approval of Amendment No. 3 and to require any 10 CFR part 72 general licensee seeking to load spent nuclear fuel into MAGNASTOR[®] Cask System under the changes described in Amendment No. 3 to request an exemption from the requirements of 10 CFR 72.212 and 72.214. Under this alternative, each interested 10 CFR 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.

Approval of the final rule is consistent with previous NRC actions. Further, as documented in the SER and the environmental assessment, the final rule will have no adverse effect on public health and safety or the environment. This final rule has no significant

identifiable impact or benefit on other Government agencies. Based on this regulatory analysis, the NRC concludes that the publication of the final rule is consistent with the NRC's responsibilities for public health and safety and the common defense and security. No other available alternative is preferable, and therefore, this action is recommended.

X. Regulatory Flexibility Certification.

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the NRC certifies that this rule will not have a significant economic impact on a substantial number of small entities. This final rule affects only nuclear power plant licensees and NAC International, Inc. These entities do not fall within the scope of the definition of small entities set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

XI. Backfitting and Issue Finality.

The NRC has determined that the backfit rule (10 CFR 72.62) does not apply to this final rule. Therefore, a backfit analysis is not required.

XII. Congressional Review Act.

Under the Congressional Review Act of 1996, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of OMB.

List of Subjects in 10 CFR Part 72

Administrative practice and procedure, Criminal penalties, Manpower training programs, Nuclear materials, Occupational safety and health, Penalties, Radiation protection, Reporting and recordkeeping requirements, Security measures, Spent fuel, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; the Nuclear Waste Policy Act of 1982, as amended; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR part 72.

PART 72 -- LICENSING REQUIREMENTS FOR THE INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL, HIGH-LEVEL RADIOACTIVE WASTE AND REACTOR-RELATED GREATER THAN CLASS C WASTE

1. The authority citation for part 72 continues to read as follows:

AUTHORITY: Atomic Energy Act secs. 51, 53, 57, 62, 63, 65, 69, 81, 161, 182, 183, 184, 186, 187, 189, 223, 234, 274 (42 U.S.C. 2071, 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2201, 2232, 2233, 2234, 2236, 2237, 2238, 2273, 2282, 2021); Energy Reorganization Act sec. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); National Environmental Policy Act sec. 102 (42 U.S.C. 4332); Nuclear Waste Policy Act secs. 131, 132, 133, 135, 137, 141, 148 (42 U.S.C. 10151, 10152, 10153, 10155, 10157, 10161, 10168); sec. 1704, 112 Stat. 2750 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat. 549 (2005).

Section 72.44(g) also issued under secs. Nuclear Waste Policy Act 142(b) and 148(c), (d) (42 U.S.C. 10162(b), 10168(c), (d)). Section 72.46 also issued under Atomic Energy Act

sec. 189 (42 U.S.C. 2239); Nuclear Waste Policy Act sec. 134 (42 U.S.C. 10154). Section 72.96(d) also issued under Nuclear Waste Policy Act sec. 145(g) (42 U.S.C. 10165(g)). Subpart J also issued under Nuclear Waste Policy Act secs. 117(a), 141(h) (42 U.S.C. 10137(a), 10161(h)). Subpart K is also issued under sec. 218(a) (42 U.S.C. 10198).

2. In § 72.214, Certificate of Compliance 1031 is revised to read as follows:

§ 72.214 List of approved spent fuel storage casks.

* * * * *

Certificate Number: 1031.

Initial Certificate Effective Date: February 4, 2009.

Amendment Number 1 Effective Date: August 30, 2010.

Amendment Number 2 Effective Date: January 30, 2012.

Amendment Number 3 Effective Date: **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

SAR Submitted by: NAC International, Inc.

SAR Title: Final Safety Analysis Report for the MAGNASTOR® System.

Docket Number: 72-1031.

Certificate Expiration Date: February 4, 2029.

Model Number: MAGNASTOR.

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Dated at Rockville, Maryland, this 12th day of June, 2013.

For the Nuclear Regulatory Commission.

R. W. Borchardt,
Executive Director for Operations.

[FR Doc. 2013-15127 Filed 06/24/2013 at 8:45 am; Publication Date: 06/25/2013]