

**Non-Proprietary Request for Additional Information**  
**Docket No. 72-1031**  
**Certificate of Compliance No. 1031**  
**Model No. MAGNASTOR® Storage System**  
**Amendment No. 12**

By letter dated January 18, 2022 (Agencywide Documents Access and Management System [ADAMS] Package Accession No. ML22024A374) as supplemented on March 18, 2022, (ADAMS Accession No. ML22077A769), NAC International (NAC) submitted an application for Amendment No. 12 to the Model No. MAGNASTOR® storage cask. The application proposes to add revise Appendix A, Technical Specification 4.2 to add a definition for the concrete cask lid and provide alternate fabrication criteria and techniques in Technical Specification A4.2 for the concrete cask lid.

This request for additional information identifies information needed by the U.S. Nuclear Regulatory Commission (NRC) staff in connection with its review of the application. The requested information is listed by chapter number and title in the applicant's safety analysis report (SAR). The NRC staff used NUREG-2215, "Standard Review Plan for Spent Fuel Dry Storage Systems at a General License Facility — Final Report," in its review of the application. Each question describes information needed by the staff for it to complete its review of the application and to determine whether the applicant has demonstrated compliance with regulatory requirements.

**Materials Evaluation**

M-1 Update the MAGNASTOR® safety analysis report (SAR) to include either: (i) a description of the measurement techniques, or (ii) a citation of the standard (e.g., ASTM International Standard No. C138, "Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete") used to determine that the concrete density in the MAGNASTOR® concrete cask lid meets the technical specification requirements.

Update the MAGNASTOR® SAR to include a citation of the standard(s) that is followed for commercial grade ready mixed concrete, such as ASTM C94, "Standard Specification for Ready Mixed Concrete," to ensure that the MAGNASTOR® concrete cask lid will have the physical properties and characteristics (e.g., lack of significant voids or cracks that may result in streaming paths) needed to ensure its required shielding safety function.

If no published consensus standard is followed, update the MAGNASTOR® FSAR to include a description of the product specifications and fabrication procedures that are followed to ensure that the MAGNASTOR® concrete cask lid will have the physical properties and characteristics (e.g., lack of significant voids or cracks that may result in streaming paths) needed to ensure its required shielding safety function.

**Basis for RAI M-1**

The proposed technical specification changes for Amendment No. 12 of the MAGNASTOR® certificate of compliance submitted by letter dated, March 18, 2022, include new text in Technical Specification Appendix A, Section 4.2, that specifies the required density for the

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concrete in the concrete cask lid and describes some qualitative aspects of the concrete used in the construction of the concrete cask lid. However, the proposed technical specification changes and the associated SAR Table 1.3-4 criteria for the concrete cask lid do not describe the measurement techniques (or the standard method used to perform measurements) for determining that the concrete density in the lid meets the technical specification requirements.

Further, the proposed technical specification changes and the associated SAR Table 1.3-4 criteria for the concrete cask lid do not identify any standards, product specifications, or fabrication procedures that are followed to ensure that the concrete cask lid has the physical properties and characteristics (e.g., lack of significant voids or cracks that may result in streaming paths) needed to ensure that it can perform its required safety function of shielding.

Therefore, the proposed changes to the technical specification and the associated SAR criteria for the concrete cask lid do not provide adequate controls (based on the use of established standards or other documented methods) for the design and fabrication of the concrete in the cask lid to ensure adequate radiation shielding performance. The proposed amendment should ensure the following:

- a. That the SAR include a description of the measurement techniques (or a citation of standard methods used to perform the measurements) for ensuring that the concrete density is measured accurately to meet technical specification requirements, and
- b. That the SAR include a citation of the standard(s) that is/are followed for commercial grade ready mixed concrete, such as ASTM C94, or include a description of the product specifications and fabrication procedures that are followed to ensure that the concrete cask lid will have the physical properties and characteristics (e.g., lack of significant voids or cracks that may result in streaming paths) needed to ensure the required shielding safety function.

This above information is requested to ensure that the MAGNASTOR® concrete cask lid and associated technical specifications and SAR Table 1.3-4 criteria meet the requirements of Title 10 of the *Code of Federal Regulations* (10 CFR) 72.236(b) and 10 CFR 72.236(g).