

October 13, 2022

U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attn: Document Control Desk

Subject: Supplement to the Submission of an Amendment Request for the NAC International MAGNASTOR® Cask System, Amendment No. 13

Docket No. 72-1031

- References:
1. U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) No. 1031 for the NAC International MAGNASTOR Cask System, Amendment No. 9, December 7, 2020
 2. MAGNASTOR Cask System Final Safety Analysis Report (FSAR), Revision 12, NAC International, September 2021
 3. ML060970083, Department of Energy, Idaho Operations Office, Notice of Issuance of Materials License SNM-2508 for TMI-2 Independent Spent Fuel Storage Installation, March 19, 1999
 4. ML060970085, Safety Evaluation Report of Three Mile Island Unit 2 Independent Spent Fuel Storage Installation Safety Analysis Report, March 19, 1999
 5. ML060970079, License for Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste, SNM-2508, Docket No. 72-20, U.S. DOE, March 19, 1999
 6. NRC PDR 8808170310, Post-Defueling Monitored Storage Proposed License Amendment and Safety Analysis Report, GPU Nuclear Three Mile Island Nuclear Station Unit II, DPR 73 Docket No. 50-320, August 16, 1988
 7. ML20059D154, Issuance of Amendment No. 48 for Possession Only License No. DPR-73 for Three Mile Island Nuclear Station Unit 2, December 28, 1993
 8. ML20011F536, GPU, Defueling Completion Report, Final Submittal, February 22, 1990
 9. ML20090B852, NRC Letter Proposed Possession Only License, Proposed Technical Specifications and Supporting Safety Evaluation for Post Defueling Monitored Storage at Three Mile Island Unit 2, February 20, 1992
 10. ED20220089, Submission of Data Disk for the NAC International MAGNASTOR® Cask System, Amendment No. 13, July 13, 2022
 11. ED20220069, Submission of an Amendment Request for the NAC International MAGNASTOR® Cask System, Amendment No. 13, July 13, 2022

NAC International (NAC) hereby submits a supplement to Reference 11 the Three Mile Island Unit 2 (TMI-2) initial submittal. The changes request herein include those provisions necessary for general licensees to addresses NRC's Enforcement Guidance Memo (EGM) 22-001 issued on April 15, 2022

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Enclosure 2 contains FSAR changes, for the potential scenario of adverse weather events during ISFSI handling operations conducted outside. Administrative controls were added to FSAR Chapter 9, which include actions that may be used prior to and during ISFSI handling operations conducted outside. This will place important to safety structures, systems, and components in an analyzed condition should there be a severe weather hazard (e.g., weather advisory, warning, or watch) predicted or issued for the area. The changes to Chapter 9 are common to both the Proprietary and Non-Proprietary versions of the FSAR

Consistent with NAC administrative practice, this proposed FSAR revision is numbered to uniquely identify the applicable changed pages. Revision bars mark the FSAR text changes on the Revision 22C pages (Enclosure 2). The included List of Effective Pages (Enclosure 2) identifies the revision level of all pages in the Reference 2 FSAR with Revision 22C incorporated. Enclosure 1 contains the List of FSAR Changes. In order to better facilitate the review process, NAC is providing the Revision 22C changed page with appropriate backing pages. In accordance with NAC's administrative practices, upon final acceptance of this application, the 22A and 22C changed pages will be reformatted and incorporated into the next revision of the MAGNASTOR FSAR.

If you have any comments or questions, please contact me on my direct line at 678-328-1252.

Sincerely,

Heath M. Baldner

Heath Baldner
Director, Licensing
Engineering

 Digitally signed by Heath M. Baldner
Date: 2022.10.13 16:02:57 -04'00'

Enclosures:

Enclosure 1 – List of Changes for MAGNASTOR FSAR, Amendment 13, Revision 22C

Enclosure 2 – MAGNASTOR, FSAR Changed Pages and LOEP, Amendment 13, Revision 22C

October 2022

Revision 22C

MAGNASTOR[®]

(Modular Advanced Generation
Nuclear All-purpose STORAGE)

FINAL SAFETY ANALYSIS REPORT

TMI Amendment 13
Supplement 01

Docket No. 72-1031



Enclosure 1

List of Changes

for

**MAGNASTOR[®] FSAR
Amendment 13 Supplement 01
Revision 22C**

(Docket No 72-1031)

NAC International

October 2022

• **List of Changes for the MAGNASTOR[®] FSAR, Revision 22C**

Note: The List of Effective Pages and the Chapter Table of Contents, List of Figures, and List of Tables have been revised accordingly to reflect the list of changes detailed below.

Chapter 1

- No changes

Chapter 2

- No changes

Chapter 3

- No changes

Chapter 4

- No changes

Chapter 5

- No changes

Chapter 6

- No changes

Chapter 7

- No changes

Chapter 8

- No changes

Chapter 9

- Pages 9-2, revised where indicated.

Chapter 10

- No changes

Chapter 11

- No changes

Chapter 12

- No changes

Chapter 13

- No changes

Chapter 14

- No changes

Chapter 15

- No changes

Enclosure 2

FSAR Changed Pages and LOEP

for

**MAGNASTOR[®] FSAR
Amendment 13 Supplement 01
Revision 22C**

(Docket No 72-1031)

NAC International

October 2022

October 2022

Revision 22C

MAGNASTOR[®]

(Modular Advanced Generation
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FINAL SAFETY ANALYSIS REPORT

TMI Amendment 13
Supplement 01

Docket No. 72-1031



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9 **OPERATING PROCEDURES**

This chapter provides general procedural guidance for the loading, unloading, and recovery of MAGNASTOR®. System user personnel shall use this information to prepare the detailed, site-specific procedures for loading, handling, storing, and unloading MAGNASTOR. Users may add, delete, or change the sequence of specific steps of the procedures to accommodate site-specific requirements provided that the general order of the tasks associated with TSC closure and storage is preserved and that the specific requirements for fastener torque values, temperature limits for operations, and other defined values in the procedure are also met. Specific optional operational sequences are identified herein to facilitate the fuel loading operations.

All facility-specific procedures prepared by users must fully comply with the MAGNASTOR Certificate of Compliance (CoC) and Technical Specifications, including the approved contents and design features.

Equipment and operating requirements will be established by the user prior to implementation. Refer to Table 9.1-1 for a listing of the major auxiliary equipment generally required by the user to load and close or to open and unload the system. MAGNASTOR provides effective shielding for operations personnel; however, the licensee/user may utilize supplemental shielding to further reduce operator radiation exposure. The planned location, type, and possible interactions of the temporary supplemental shielding with MAGNASTOR shall be appropriately evaluated by the licensee/user. MAGNASTOR, when operated by properly trained personnel in accordance with the generic procedures provided herein, will meet As Low As Reasonably Achievable (ALARA) guidance for personnel exposure control.

MAGNASTOR's design features minimize the potential for contamination of the TSC during fuel loading, canister preparation, and transfer. The TSC is loaded in the spent fuel pool, but the external surfaces of the canister are protected from contact with the contaminated pool water by clean water maintained in the annulus between the transfer cask and the TSC. For purposes of the operating procedures, clean water is defined as demineralized, processed, or filtered pool water, or any water external to the spent fuel pool that has water chemistry compatible for use in the spent fuel pool. During loading and/or cooling operations, the exterior surfaces of the TSC shell, bottom and closure lid can be exposed to spent fuel pool water, which may be contaminated. The smooth exterior surfaces of the TSC shell, bottom and closure lid can be readily decontaminated. Therefore, the TSC external surfaces are expected to be essentially free of removable contamination during long-term storage operations.

Tables in Chapter 3 provide the handling weights for the major components of MAGNASTOR and the loads to be lifted during various phases of the loading and unloading operations. Licensees/users must perform appropriate reviews and evaluations to ensure that the lifted loads do not exceed rated load limits of user-supplied lifting equipment and comply with the facility's heavy-load program.

Additional details and guidance on the operations of the MAGNASTOR System are provided in the MAGNASTOR Operations Manual, Document No. 71160-P-02, (or equivalent site-specific manuals prepared for individual Licensees/Users), including more detailed step-by-step operating procedures, and identification of Contingency Events and proposed corrective actions to ensure that FSAR and Technical Specification limits are not exceeded. Section 9.1 of this chapter includes several example contingency events and corrective actions which are addressed in notes and caution statements. Guidance applicable to specific loading patterns and equipment configurations are included in the MAGNASTOR Operations Manual or equivalent site-specific manual prepared for individual Licensees/Users. The Operations Manual also contains additional information on the system design description, characteristics, ancillary equipment design and functions, and operational figures of the ancillary systems.

At the option of the MAGNASTOR user and prior to the beginning of ISFSI handling operations, as defined below, general licensees may implement administrative controls to preclude conducting operations during periods of adverse weather. The administrative controls shall include at a minimum; establishing safe condition and forecast, as defined below where there are no adverse weather warnings, watches, and advisories for the oncoming 8 hours. Additionally, the administrative controls shall include compensatory measures to place important to safety structures, systems, and components in an analyzed condition if the safe condition and forecast can no longer be met.

- ISFSI Handling Operations – All activities associated with the lifting, placement, and movement of a loaded transportable storage canister, vertical concrete cask, or other structures, systems, and components important to safety.
- Safe Condition and Forecast – A safe condition and forecast is considered to be the absence of tornado and severe thunderstorm watches, tornado and severe thunderstorm warnings, hazardous weather outlook indicating a moderate or high risk of severe thunderstorms or where the predicted wind speeds would qualify for a severe thunderstorm watch (58 mph or greater) for the oncoming 8 hours. Weather forecasts will be accessed from the NOAA Weather Forecast Office nearest to each ISFSI.