

August 23, 2021

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

Attn: Document Control Desk

Subject: Submission of Responses to the NRC's Request for Additional Information for the NAC International MAGNASTOR® Cask System Amendment No. 11

Docket No. 72-1031
EPID No. L-2020-LLA-0158

- 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 10, NAC International, February 2019
 3. ED20200085, Submission of a Request to Amend the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR® Cask System, July 14, 2020
 4. U.S. Nuclear Regulatory Commission (NRC), Application for Amendment No. 11 to the Model No. MAGNASTOR® Storage Cask – First Request for Additional Information, February 26, 2021

NAC International (NAC) hereby submits responses to the NRC's Request for Additional Information (RAI) (Reference 4). The RAI responses are contained in Enclosure 1. Additionally, FSAR Section 4.11 has been revised to include corrections to the effective thermal properties for PWR fuel assemblies used in the licensing basis ANSYS thermal models. The new temperature results are included in the updated FSAR changed pages (Enclosure 5) and the revised analyses results do not exceed thermal limits or alter any operational time limits. Calculations 71160-3081, 71160-3085, 71160-3086, and 71160-3087 have been revised to correct this error and are being provided in Enclosure 3. This issue has been entered into NACs corrective action program via Corrective Action Report (CAR) CAR 21-02.

The scope of the FSAR thermal evaluation revisions in this submittal includes:

- Removal of PWR 14x14 fuel from applicable PWR fuel types:
All thermal analyses for FSAR Section 4.11 (Amendment 11) were re-performed to use the effective properties for the new bounding PWR 16x16 fuel. The analyses include storage (TSC in CC) and transfer (TSC in LMTC) conditions. The corresponding calculations are 71160-3085 and 71160-3087 for storage conditions and 71160-3081 and 71160-3086 for transfer conditions. Additional limitations for 14x14 fuel types have been added to CoC Appendix B, Table B2-2.

U.S. Nuclear Regulatory Commission
August 23, 2021
Page 2 of 2

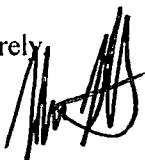
- Response to RAI 4-2 (heat balance):
The 3-Dimensional TSC model for PWR fuel in FSAR Section 4.11.1.2.1 and calculation 71160-3085 was also updated to also address RAI 4-2. As noted in NAC response to RAI 4-2, all cases in calculation 71160-3085 were updated and the associated FSAR sections (Sections 4.11.2.1.1, 4.11.3, 4.11.4 and 4.11.5) were revised accordingly.

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 21B pages (Enclosure 5). The included List of Effective Pages (Enclosure 5) identifies the revision level of all pages in the Reference 2 FSAR with Revision 21B incorporated. Enclosure 2 details the list of FSAR changes. In order to better facilitate the review process, NAC is providing the Revision 21B changed pages with appropriate backing pages. In accordance with NAC's administrative practices, upon final acceptance of this application, the 20A and 21B changed pages will be reformatted and incorporated into the next revision of the MAGNASTOR FSAR.

Enclosure 4 includes proposed CoC changes to be incorporated into Reference 1. Note, the basis of the proposed changes, as shown in Enclosure 4, is Amendment 8 and not 9 (Reference 1). At the time of the initial submittal of this amendment, CoC Amendment 8 was the latest revision that was effective. To avoid confusion from the initial submittal, NAC has left the proposed changes relative to Amendment 8. However, these changes when approved by the NRC need to be applied to the latest effective CoC revision at that time.

NAC is requesting an effective date for this amendment to be prior to June 2022. Per Attachment 1 to this letter, NAC requests NAC proprietary information contained in Enclosures 3 and 5 to be withheld from public disclosure via 10 CFR 2.390. If you have any comments or questions, please contact me on my direct line at 678-328-1236.

Sincerely,



Wren Fowler
Director, Licensing
Engineering

Attachment:
Attachment 1 – NAC International Affidavit Pursuant to 10 CFR 2.390

Enclosures:
Enclosure 1 – Responses to NAC MAGNASTOR® RAIs, Revision 21B
Enclosure 2 – List of Changes for MAGNASTOR FSAR, Amendment 11, Revision 21B
Enclosure 3 – Supporting Calculations for MAGNASTOR FSAR, Amendment 11, Revision 21B
Enclosure 4 – Proposed Changes for MAGNASTOR Certificate of Compliance, Amendment 11, Revision 21B
Enclosure 5 – MAGNASTOR, FSAR Changed Pages and LOEP, Amendment 11, Revision 21B

**NAC INTERNATIONAL
AFFIDAVIT PURSUANT TO 10 CFR 2.390**

George Carver (Affiant), Vice President, Engineering and Support Services, of NAC International, hereinafter referred to as NAC, at 3930 East Jones Bridge Road, Peachtree Corners, Georgia 30092, being duly sworn, deposes and says that:

1. Affiant has reviewed the information described in Item 2 and is personally familiar with the trade secrets and privileged information contained therein, and is authorized to request its withholding.
 2. The information to be withheld includes the following NAC Proprietary Information that is being provided to support the technical review of NAC's Request for a Certificate of Compliance (CoC) (No. 1031) for the NAC International MAGNASTOR Cask System.
 - Enclosure 3, NAC International Proprietary Calculations (Data Disk 1 of 1)
 1. 71160-2031, Rev 0, LS-DYNA Tip-Over Analysis for CC7 Concrete Cask
 2. 71160-3056, Rev 0, RELAP5 Evaluation for Annulus Cooling Water at End of Vacuum Drying
 3. 71160-3060, Rev 2, MAGNASTOR VCC/BWR Canister Thermal Evaluation for High Heat Loading
 4. 71160-3071, Rev 2, MAGNASTOR VCC/BWR DF Canister Thermal Evaluation for High Heat Loading
 5. 71160-3081, Rev 3, MAGNASTOR PWR Transfer Cask and Canister Thermal Evaluation for High Heat Loads
 6. 71160-3085, Rev 2, MAGNASTOR Concrete Cask and PWR Canister Thermal Evaluation for High Heat Loads
 7. 71160-3086, Rev 2, MAGNASTOR Transfer Cask Transient Thermal Analyses for PWR Preferential Loading
 8. 71160-3087, Rev 2, MAGNASTOR VCC Vent Blocked Evaluation for PWR High Heat Load
 - Enclosure 5, MAGNASTOR FSAR, Revision 21B – Proprietary Version
- NAC is the owner of the information contained in the above documents. Thus, all of the above identified information is considered NAC Proprietary Information.
3. NAC makes this application for withholding of proprietary information based upon the exemption from disclosure set forth in: the Freedom of Information Act ("FOIA"); 5 USC Sec. 552(b)(4) and the Trade Secrets Act; 18 USC Sec. 1905; and NRC Regulations 10 CFR Part 9.17(a)(4), 2.390(a)(4), and 2.390(b)(1) for "trade secrets and commercial financial information obtained from a person, and privileged or confidential" (Exemption 4). The information for which exemption from disclosure is herein sought is all "confidential commercial information," and some portions may also qualify under the narrower definition of "trade secret," within the meanings assigned to those terms for purposes of FOIA Exemption 4.
 4. Examples of categories of information that fit into the definition of proprietary information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by competitors of NAC, without license from NAC, constitutes a competitive economic advantage over other companies.

**NAC INTERNATIONAL
AFFIDAVIT PURSUANT TO 10 CFR 2.390**

- b. Information that, if used by a competitor, would reduce their expenditure of resources or improve their competitive position in the design, manufacture, shipment, installation, assurance of quality or licensing of a similar product.
- c. Information that reveals cost or price information, production capacities, budget levels or commercial strategies of NAC, its customers, or its suppliers.
- d. Information that reveals aspects of past, present or future NAC customer-funded development plans and programs of potential commercial value to NAC.
- e. Information that discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information that is sought to be withheld is considered to be proprietary for the reasons set forth in Items 4.a, 4.b, and 4.d.

- 5. The information to be withheld is being transmitted to the NRC in confidence.
- 6. The information sought to be withheld, including that compiled from many sources, is of a sort customarily held in confidence by NAC, and is, in fact, so held. This information has, to the best of my knowledge and belief, consistently been held in confidence by NAC. No public disclosure has been made, and it is not available in public sources. All disclosures to third parties, including any required transmittals to the NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements, which provide for maintenance of the information in confidence. Its initial designation as proprietary information and the subsequent steps taken to prevent its unauthorized disclosure are as set forth in Items 7 and 8 following.
- 7. Initial approval of proprietary treatment of a document/information is made by the Vice President, Engineering, the Project Manager, the Licensing Specialist, or the Director, Licensing – the persons most likely to know the value and sensitivity of the information in relation to industry knowledge. Access to proprietary documents within NAC is limited via “controlled distribution” to individuals on a “need to know” basis. The procedure for external release of NAC proprietary documents typically requires the approval of the Project Manager based on a review of the documents for technical content, competitive effect and accuracy of the proprietary designation. Disclosures of proprietary documents outside of NAC are limited to regulatory agencies, customers and potential customers and their agents, suppliers, licensees and contractors with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- 8. NAC has invested a significant amount of time and money in the research, development, engineering and analytical costs to develop the information that is sought to be withheld as proprietary. This information is considered to be proprietary because it contains detailed descriptions of analytical approaches, methodologies, technical data and/or evaluation results not available elsewhere. The precise value of the expertise required to develop the proprietary information is difficult to quantify, but it is clearly substantial.
- 9. Public disclosure of the information to be withheld is likely to cause substantial harm to the competitive position of NAC, as the owner of the information, and reduce or eliminate the availability of profit-making opportunities. The proprietary information is part of NAC’s comprehensive spent fuel storage and transport technology base, and its commercial value extends beyond the original development cost to include the development of the expertise to determine and apply the appropriate evaluation process. The value of this proprietary information and the competitive advantage that it provides to NAC would be lost if the information were disclosed to the public. Making such information available to other parties, including competitors, without their having to make similar investments of time, labor and money would provide competitors with an unfair advantage and deprive NAC of the opportunity to seek an adequate return on its large investment.

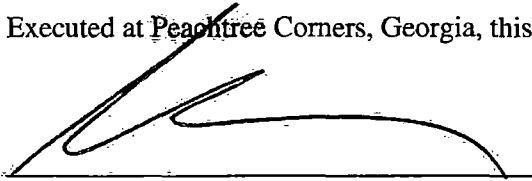
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STATE OF GEORGIA, COUNTY OF GWINNETT

Mr. George Carver, being duly sworn, deposes and says:

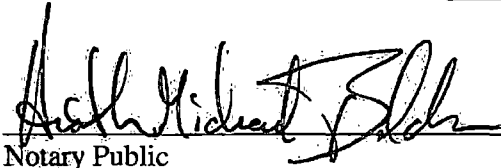
That he has read the foregoing affidavit and the matters stated herein are true and correct to the best of his knowledge, information and belief.

Executed at Peachtree Corners, Georgia, this 23rd day of August, 2021.



George Carver
Vice President, Engineering and Support Services
NAC International

Subscribed and sworn before me this 23rd day of August, 2021.



Notary Public

