

August 8, 2013

Mr. Anthony L. Patko  
Director, Licensing Engineering  
NAC International  
3930 East Jones Bridge Road, Suite 200  
Norcross, GA 30092

SUBJECT: APPLICATION FOR AMENDMENT TO MATERIALS CERTIFICATE OF  
COMPLIANCE NO. 1031, DOCKET NO. 72-1031 – SUPPLEMENTAL  
INFORMATION NEEDED

Dear Mr. Patko:

By letter dated June 18, 2013, you submitted an application to amend Certificate of Compliance (CoC) No. 1031, Amendment No. 4, Docket No. 72-1031. The application requests to revise information regarding Limiting Condition for Operations (LOC) 3.1.1, Section 1. NRC staff performed an acceptance review of the proposed amendment to determine if the application contained sufficient technical information in scope and depth to allow the staff to complete the detailed technical review.

This letter is to advise you that, based on our acceptance review, the application does not contain sufficient technical information. The information needed to continue our review is described in the enclosure to this letter as requests for supplemental information (RSIs). In order to schedule our technical review, the RSI responses should be provided in two weeks from the date of this letter. If the RSI responses are not received by this date, the review of this application may be delayed. This letter confirms our phone call on August 5, 2013, with respect to the supplemental information needed. If you have any questions regarding this matter, please contact me at (301) 287- 9202.

Sincerely,

**/RA/**

John-Chau Nguyen, Sr. Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 72-1031

TAC No.: L24757

cc: Sam Fowler

Enclosure: Request for Supplemental Information

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NAC International  
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NO. 1031, DOCKET NO. 72-1031 – SUPPLEMENTAL INFORMATION NEEDED

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Enclosure: Request for Supplemental Information

Distribution: SFST R/F MLombard THsia DMarcano ZLi JChang  
PLongmire JDavis

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DIVISION	SFST	SFST	SFST	SFST	SFST
NAME:	JCNguyen	WWheatley	MRahimi	CAraguas	MSampson
DATE:	08/05/2013	08/05/2013 (via e-mail)	08/07/2013 (via e-mail)	08/07/2013 (via e-mail)	8/8/2013

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NAC INTERNATIONAL

DOCKET NO. 72-1031

REQUESTS FOR SUPPLEMENTAL INFORMATION (RSIs)

RELATED TO THE PROPOSED MAGNASTOR AMENDMENT NO. 4

**RSI 1:** Provide the thermal model of the transfer cask and estimate the spatial discretization errors to identify the uncertainties in the model and to quantify the peak cladding temperature (PCT) difference contributed by each of the errors.

The applicant proposed to (1) increase the TSC transfer time from 8 hours to “no limit” for PWR fuel with heat load less than 20 kW and to (2) revise the helium backfill time from 0 to 7 hours and increase the TSC transfer time from 8 to 70.5 hours for PWR fuel with heat load less than 25 kW.

The staff reviewed the description of the modeling method in Appendix AA (Calc. No. 71160-3020, Rev. 11), and request that the FLUENT thermal model of the air transfer phase (with 7 hours of helium backfill and 70.5 hours of TSC transfer) be provided to verify the calculations.

The applicant should estimate the spatial discretization errors and assess the sensitivity of the solution to the grid density (using Grid Convergence Index method, ASME V&V 20-2009). The estimate will help quantify the uncertainty in the temperature calculations.

This information is required by the staff to determine compliance with 10 CFR 72.236(f).

**RSI 2:** Provide the assumptions used in the calculations of the thermal model.

The applicant should provide all assumptions used in the thermal calculations of helium backfill (cooling phase) and TSC transfer (air-transfer phase). The summary will help identify whether the assumptions used in the thermal calculations are reasonable and the safety margins are acceptable. It is suggested to list the assumptions as bullets for each calculation.

This information is required by the staff to determine compliance with 10 CFR 72.236(f).

### **RSI 3:**

Provide the following information regarding the proposed amendment:

1. Updated dose rates on the surface of the transfer cask loaded with low decay heat fuel;
2. Detailed breakdown of the operating procedure that shows the maximum time needed for each step;
3. Updated radiation protection evaluation for the dose received by occupational workers with the new dose rates and extended operating time;
4. Updated calculation for the dose received by a real individual at the controlled area boundary per the requirements of 10 CFR 72.104 and 72.106; and
5. An ALARA assessment on the proposed extended helium backfilling time for PWR TSC transfer operation.

In its request for Amendment No. 4 to the NAC MAGNASTOR spent fuel dry cask storage system design Certificate of Compliance, the applicant requested a change to the operating procedures to allow for a longer operating time for the helium backfill operations. However, the application did not include information on the impact on the doses received by the occupational workers loading the cask and the real individuals at the controlled area boundary. The application did not provide an assessment of the impact on the ALARA analyses that were established based on a much shorter operating time. The applicant needs to provide updated information on a detailed breakdown of the time used for each step and associated radiation protection with the extended operating time.

The staff needs this information for it to evaluate if the design meets the regulatory requirements of 10 CFR Part 20 (20.1101, 20.1201(a), 20.1207, 20.1208, 20.1301(a),(b),(d), 20.1302(a), 20.1406, 20.1501(a)(1), and 20.1701, 20.1702), and Part 72 (72.236(d), 72.104(b), 72.122(f), (h)(1),(l), 72.234(f), and 72.236(h)(i)).

### **Observation**

Review and correct, if necessary, the proposed amendment application

In its application letter dated June 18, 2013, the applicant indicates that the amendment is to change the title of LCO 3.1.1, Section 1, first table from "PWR Drying with 8 Hours TSC Transfer" to "PWR TSC Transfer with Reduced Helium Backfill Time." However, the proposed changes in the table show that the changes are to increase the allowable helium backfilling times for low decay heat fuel. There is a mismatch between the stated purpose of this amendment and the proposed changes in the table. The applicant needs to review the proposed changes and revise the title of the table and the data in the table as necessary.

This information is needed in accordance with 10 CFR 72.236.