

January 14, 2015

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

Attn: Document Control Desk

Subject: Submission of a Supplement Requesting a Revision to Amendments 0 thru 3 of the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR® Cask System

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. 0, February 4, 2009
  2. U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) No. 1031 for the NAC International MAGNASTOR Cask System, Amendment No. 1, August 30, 2010
  3. U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) No. 1031 for the NAC International MAGNASTOR Cask System, Amendment No. 2, January 30, 2012
  4. U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) No. 1031 for the NAC International MAGNASTOR Cask System, Amendment No. 3, July 25, 2013
  5. ED20140050, Submission of a Supplement to NAC's Request to Amend the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR Cask System, June 13, 2014, (Amendment 5)
  6. ED20140051, Submission of a Supplement to NAC'S Request to Amend the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR Cask System, June 13, 2014, (Amendment 4)
  7. ED20140054, Submission of a Supplement to NAC's Request to Amend the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR Cask System, June 17, 2014, (Amendment 4)
  8. ED20140068, Submission of a Supplement Requesting a Revision to Amendment 2 and 3 of the U.S. Nuclear Regulatory Commission Certificate of Compliance No. 1031 for the NAC International MAGNASTOR® Cask System, June 20, 2014

Via References 5 and 7, NAC requested the NRC incorporate a correction for a typographical error located in Technical Specification (TS) Appendix A for Amendments 5 and 4, respectively. NAC, via Reference 8, requested the typographical error located in TS Appendix A, Section 4.1.1(a) to also be corrected in Amendments 2 and 3 (References 3 and 4) and issue a revised TS Appendix A for those amendments. Specifically, the required minimum actual areal density for PWR fuel shown on line 2 for "Borated Aluminum Alloy" and "Borated MMC" should be "0.0334" and not "0.334". This typographical error is not applicable to Amendments 0 or 1 (References 1 and 2) and NAC has not fabricated any neutron absorbers to the incorrect area densities.

In addition, via Reference 6, NAC requested TS Appendix B, Table B2-5 be corrected in the Amendment 4 application. This correction request, in its entirety, is applicable to Amendments 0 thru 3. Specifically, TS Table B2-4 in Amendments 0 and 1 (Reference 1 and 2) and Table B2-5 in Amendments 2 and 3 (Reference 3 and 4). NAC, herewith, requests both the typographical error described in the paragraph above and the correction request described in this paragraph be implemented with a revised set of TS for Amendments 0 thru 3.

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To support the NRC's efforts in issuing a revised set of TS for Amendments 0 thru 3, NAC requested Duke Energy and *ZionSolutions* to provide letters to NAC indicating that all systems loaded to date, and planned, are in compliance with the requested corrections. All sites have implemented administrative controls to ensure compliance with the proposed TS. Their current intentions are to recertify their casks to Amendment 4 or 5 as soon as practical. See Attachments 1 and 2 for both Duke Energy and *ZionSolutions* letters, respectively.

It is requested that the NRC issue revised TS for Amendments 0 thru 3 in case future NAC MAGNASTOR users decide to use these amendments and to allow Duke Energy and *ZionSolutions* to exit their implemented administrative controls. Since Duke Energy and *ZionSolutions* have ensured compliance with the proposed corrected TS by implementing administrative controls and documenting this compliance via Attachments 1 and 2, NAC is requesting the NRC issue a revised set of TS for Amendments 0 thru 3 without implementation of a backfit.

If you have any comments or questions, please contact me on my direct line at 678-328-1236.

Sincerely,



Wren Fowler  
Director, Licensing  
Engineering

Attachments:

Attachment 1 – Duke Energy Letter, Duke Energy Compliance with MAGNASTOR TS Table B2-5 Error, January 8, 2015

Attachment 2 – ZS-2015-0007, *ZionSolutions* Compliance with MAGNASTOR Technical Specifications Table B2-5 Error, January 13, 2015

## **Attachment 1**

**Duke Energy Letter**

**Duke Energy Compliance with MAGNASTOR TS Table B2-5 Error**

**January 8, 2015**



526 South Church Street  
Mail Code EC07F  
Charlotte, NC 28202  
☎ 704-382-9284

Jan. 8, 2015

Eric Shewbridge  
NAC International  
3930 East Jones Bridge Road, Suite 200  
Norcross, GA 30092

Subject: Duke Energy Compliance with MAGNASTOR TS Table B2-5 Error

Dear Mr. Shewbridge:

On May 29, 2014 NAC notified Duke about non-conservative values in Table B2-5 contained in the MAGNASTOR Certificate of Compliance (CoC) 1031, Amendment 2. At the time of notification, Duke had loaded and placed on the ISFSI 5 MAGNASTOR canisters, 2 at Catawba Nuclear Station and 3 at McGuire Nuclear Station. As part of the notification NAC proposed a new Table B2-5. This letter is being written to document the current Duke position with respect to the identified condition.

Duke immediately performed an investigation of loaded systems for compliance with the proposed Table B2-5. These investigations are documented within the Duke corrective action program as PIPs C-14-5788 and M-14-5276 for Catawba and McGuire respectively. The summary of this investigation is below:

Site	Canister	Loading Pattern	Disposition
Catawba	CNZ-074	Uniform	Not Applicable
Catawba	CNZ-077	Preferential	Satisfied Existing and Proposed Table B2-5
McGuire	MNZ-057	Uniform	Not Applicable
McGuire	MNZ-073	Preferential	Satisfied Existing and Proposed Table B2-5
McGuire	MNZ-065	Preferential	Satisfied Existing and Proposed Table B2-5

Following identification, communication between Duke, NAC, and the NRC determined an acceptable position to support continued dry cask loading was to implement administrative controls to ensure compliance with the proposed Table B2-5. This position was documented within the previously referenced Duke corrective actions.

Following implementation of the administrative controls, the following canisters have been loaded:

Site	Canister	Loading Pattern	Disposition
Catawba	CNZ-080	Preferential	Satisfied Existing and Proposed Table B2-5
Catawba	CNZ-078	Preferential	Satisfied Existing and Proposed Table B2-5
Catawba	CNZ-079	Preferential	Satisfied Existing and Proposed Table B2-5
McGuire	MNZ-061	Preferential	Satisfied Existing and Proposed Table B2-5
McGuire	MNZ-062	Preferential	Satisfied Existing and Proposed Table B2-5

All systems have been loaded to Amendment 2 of the MAGNASTOR CoC.

Both Catawba and McGuire are currently treating the non-conservative table as an Operable But Degraded/Nonconforming (OBDN) condition. To resolve the OBDN both Catawba and McGuire plan to adopt MAGNASTOR CoC Amendment 4 or Amendment 5 as soon as practical after the Amendments are issued, as this appears to be the fastest way to resolve the OBDN condition. The exact decision on which amendment to adopt has not been made. Currently loaded systems will be recertified to the adopted amendment. This will avoid the issue of backfitting the currently issued Amendment 2 to which all Duke MAGNASTOR systems are currently loaded.

Until MAGNASTOR CoC Amendment 4 or 5 is issued and adopted by Catawba and McGuire, each station will continue its current loading schedule, loading canisters under Amendment 2 with administrative controls in place to ensure compliance with proposed Table B2-5.

Sincerely,



Steve Edwards  
Manager of Spent Fuel Management

## **Attachment 2**

**ZS-2015-0007**

***ZionSolutions* Compliance with MAGNASTOR Technical Specifications Table B2-5 Error**

**January 13, 2015**



January 13, 2015

ZS-2015-0007

Alan Altera  
NAC International Inc.  
3930 East Jones Bridge Road, Suite 200  
Norcross, GA 30092

Subject: *ZionSolutions* Compliance with MAGNASTOR Technical Specifications  
Table B2-5 Error

Dear Mr. Altera:

On May 29, 2014 NAC notified *ZionSolutions* about non-conservative values in Table B2-5 contained in the MAGNASTOR Certificate of Compliance (CoC) No. 1031, Amendment 3. At the time of notification, *ZionSolutions* had loaded and placed on the ISFSI, twenty MAGNASTOR storage systems in accordance with CoC No. 1031, Amendment 3. As part of the notification NAC proposed a new Table B2-5 which incorporated updated cooling times associated with non-fuel hardware and a typographical error in Appendix A, Section 4.1 associated with Boral Areal Density. This letter is being written in response to your request of December 11, 2014 to document *ZionSolutions* position with respect to the identified conditions in order to continue the NRC review and approval of Amendment 4.

Condition Report 2014-000585 was initiated to evaluate both the MAGNASTOR storage systems already loaded and impact to storage systems still to be loaded. *ZionSolutions* reviewed the loading records of the twenty storage systems already placed at the ISFSI Pad and determined those systems were in compliance with the proposed Table B2-5. At the time of notification, *ZionSolutions* was in the process of loading TSC number twenty-one and because the Table B2-5 values were suspect, a swap out of a rod cluster control assembly (RCCA) containing fuel assembly with a suitable alternate fuel assembly without a RCCA was made to assure compliance with the Table until a path forward was identified. Following identification of the issue, communication between *ZionSolutions*, Duke, NAC, and the NRC determined an acceptable position to support continued dry cask system loading was to implement administrative controls to ensure compliance with the proposed Table B2-5 as documented in NAC transmittal ED20140049 dated June 5, 2014. *ZionSolutions* then determined that all planned future loadings would be in compliance with the proposed Table B2-5. Consequently, *ZionSolutions* continued to load TSCs under the CoC No. 1031, Amendment 3 with the revised cooling times provided by NAC in proposed Table B2-5. The typographical error in the Boral Areal Density had no impact on Zion fuel loading, as that item was not a compliance basis for *ZionSolutions* for any storage system loaded or to be loaded.

At this time *ZionSolutions* has completed loading the total inventory of sixty-one storage systems in accordance with CoC No. 1031, Amendment 3, and all are in compliance with the proposed Table B2-5.

ZionSolutions, LLC

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ZionSolutions plans to adopt MAGNASTOR CoC No. 1031, Amendment 4 as soon as practical after the Amendment is issued and the loaded systems will be recertified to the adopted amendment, as this appears to be the best way to resolve the condition associated with use of the proposed Table B2-5. This will avoid the issue of back-fitting the currently issued Amendment 3 to which all MAGNASTOR storage systems at Zion Station are currently loaded.

Respectfully,



Gerard van Noordennen

Vice President Regulatory Affairs

cc: John Sauger, ZionSolutions, LLC, Senior VP & General Manager

Richard Tooze, ZionSolutions, LLC, VP Director, Finance and Business