

October 19, 2016

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

Attn: Document Control Desk  
Director, Division of Spent Fuel Management,  
Office of Nuclear Material Safety and Safeguards

Subject: 10 CFR 71.95 Report for Instances Where the Conditions of Approval in the  
Certificate of Compliance Were Not Observed In Making a Shipment

Docket No. 71-9225, NAC-LWT Package

Dear Mr. Lombard:

71.95(c)(1) – Abstract

Background

On September 27, 2012, license drawing 315-40-172, Revision 0 was issued, which detailed the configuration of the NRU/NRX basket lid assembly. This drawing listed in the bill of materials that Item #5, lid collar, would be procured to material form specification ASME SA312, which is a pipe specification. This drawing was subsequently submitted to and approved by the NRC and is reflected in Revision 58 of the NRC Certificate of Compliance (CoC), dated February 28, 2013. On February 27, 2013, an NAC design change request for licensing (DCR(L)) 315-40-172-0A was issued, internally approved, and marked “pending regulatory approval” for a change to the material form specification for Item #5. Specifically, the specification was changed from a pipe specification to ASME SA249, which is a tube specification. This change was made to correct an inconsistency between the existing license drawing dimensions of the lid collar and the material form specification, which had it been left as ASME SA312 would have required machining of the lid collar in order to meet the dimensional requirements on the associated license drawing. Procuring to ASME SA249 required no machining as the lid collar would already meet the license drawing dimensional requirements. However, this drawing change was inadvertently excluded from subsequent NRU/NRX application submittal packages to the NRC. Thus, it had yet to be reviewed and approved by the NRC until NAC requested that the NRC issue CoC Revision 67 on October 14, 2016.

Discovery

On October 12, 2016 in preparation of a new NAC-LWT NRU/NRX amendment request with the NRC, it was identified that the existing six NRU/NRX basket lids had been fabricated in accordance with the change detailed in DCR(L) 315-40-172-0A, which had not been submitted to and approved by the NRC. This has resulted in 5 of the 6 NRU/NRX basket lids being used to ship NRU/NRX fuel while not being constructed in accordance with the NAC-LWT CoC. Specifically, CoC Section 5.(a)(3)(ii), “Drawings”, which requires the NRU/NRX basket lid to be constructed in accordance with license drawing LWT 315-40-172, Revision 0. This is reportable under 10 CFR 71.95(a)(3)

ED20160105

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because shipments were completed with conditions of approval in the CoC that were not observed in making a shipment. Specifically, the material form specification for Item #5 on license drawing 315-40-172, Revision 0, which requires procurement to ASME SA312 for the lid collar.

#### Actions Taken

On October 13, 2016, the NRC was informed of the situation and that an approval package was being immediately developed and would be submitted the following day. In addition, all affected customers and other regulatory authorities were notified of the compliance issue with the “as-fabricated” condition and what is currently authorized in the CoC. On October 14, 2016, a submittal package was provided to the NRC requesting approval of license drawing 315-40-172, Revision 1, which incorporated DCR(L) 315-40-172-0A. Additionally, this issue has been entered into the NAC corrective action program as Self Identification Report (SIR) 16-011 and Finding Report (FR) 16-015. Future NRU/NRX fuel shipments have been suspended until NRC approval of license drawing revision 315-40-172, Revision 1 is received and all subsequently associated domestic and international regulatory approvals are acquired.

#### 71.95(c)(2) Description:

##### Lid Assembly, NRU/NRX

License Drawings: 315-40-172, Rev. 0, Lid Assembly, NRU/NRX (Attachment 1)  
315-40-172, Rev. 1, Lid Assembly, NRU/NRX (Attachment 2)

#### Background

The NAC International Legal Weight Truck (NAC-LWT) spent fuel shipping cask is approved by the NRC for the transport of various radioactive materials. The NAC-LWT cask assembly is composed of a package that provides a containment vessel preventing the release of radioactive material. The cask is designed and certified to transport numerous fissile and radioactive contents, as described in the Certificate of Compliance (CoC) 71-9225. Depending on the contents, the configurations may require spacers, baskets, basket inserts, canisters, caddy assemblies, etc., to support and/or control the content geometry during transport. Authorized NAC-LWT contents include NRU and NRX fuel. To enclose the NRU/NRX basket assembly an NRU/NRX lid assembly is installed at the top of the basket assembly.

#### Requirement

Prior to issuance of NRC CoC Revision 67 on October 14, 2016, the NRU/NRX lid assembly bill of materials Item # 5, lid collar, is to be procured to material form specification ASME SA312 (i.e., pipe specification) as reflected on Revision 0 to license drawing 315-40-172.

#### Reportable Condition

On October 12, 2016 in preparation of a new NAC-LWT NRU/NRX amendment request with the NRC, it was identified that the existing six NRU/NRX lid assemblies (i.e., S/N's 315-391-172-01 thru -06) had be fabricated in accordance with the change detailed in DCR(L) 315-40-172-0A, which

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had not been submitted to and approved by the NRC. This has resulted in 5 of the 6 NRU/NRX basket lids (i.e., S/N's 315-391-172-01, -02, -03, -05, and -06) being used to ship NRU/NRX fuel while not being constructed in accordance with the NAC-LWT CoC. Specifically, CoC Section 5.(a)(3)(ii), "Drawings", which required the NRU/NRX basket lid to be constructed in accordance with license drawing LWT 315-40-172, Revision 0. This is reportable under 10 CFR 71.95(a)(3) because shipments were completed with conditions of approval in the CoC that were not observed in making a shipment. Specifically, the material form specification for Item #5 on license drawing 315-40-172, Revision 0, which requires procurement to ASME SA312 for the lid collar. The failure to construct the 5 NRU/NRX lid assemblies, which have been actively used in the shipment of NRU/NRX fuel, in accordance with license drawing 315-40-172, Revision 0 is reportable under 10 CFR 71.95(a)(3) because conditions of approval in the Certificate of Compliance (CoC) were not observed in making a shipment.

#### Impact on Operability

Future NRU/NRX fuel shipments have been suspended until all associated regulatory approvals have been received authorizing the use of a lid collar procured to ASME SA249 (i.e., U.S. NRC, U.S. DOT, and associated foreign validations).

#### Extent of Condition

All 6 NRU/NRX lid assemblies, which have been fabricated to date, are affected. However, only 5 lid assemblies have been used in an actual NRU/NRX fuel shipment. Since the issuance of NRC CoC Rev. 58, 12 NRU/NRX fuel shipments have occurred utilizing 5 of the 6 constructed NRU/NRX lid assemblies. NAC has entered this into our corrective action program as SIR-16-011 and FR-16-015. Future NRU/NRX fuel shipments have been suspended until all associated regulatory approvals have been received authorizing the use of a lid collar procured to ASME SA249 (i.e., U.S. NRC, U.S. DOT, and associated foreign validations).

#### 71.95 (c)(3) Assessment of Safety Consequences and Implications

There are no safety consequences or implications associated with the use of a lid collar procured to ASME SA249 versus ASME SA312. The chemical requirements, including the tensile and strength requirements, are identical between ASME SA249 and ASME SA312. The only difference between the two is the geometry of the standard sizes.

#### 71.95(c)(4) Corrective Actions

NAC has documented the condition in a SIR-16-011 and FR-16-015, in accordance with our Quality Assurance Program, to address the condition described herein. Future NRU/NRX fuel shipments have been suspended until all associated regulatory approvals have been received authorizing the use of a lid collar procured to ASME SA249 (i.e., U.S. NRC, U.S. DOT, and associated foreign validations).

#### 71.95(c)(5) Previous Similar Events

On December 18, 2015 NAC notified the NRC of a 10 CFR 71.95 reportable event via letter ED20150155. This event was reportable because NRU/NRX caddy assemblies were not constructed

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in accordance with the associated license drawing requirements because welders used to construct the caddy assemblies were not qualified for a particular tube weld joint configuration.

71.95(c)(6) Contact

Mr. Wren Fowler  
Director, Licensing  
Phone: 678-328-1236  
Email: [sfowler@nacintl.com](mailto:sfowler@nacintl.com)

71.95(c)(7) Radiological Consequences

The condition described herein did not cause any additional exposure of individuals to radiation or to radioactive materials.

Conclusion

This is reportable under 10 CFR 71.95(a)(3) because conditions of approval in the certificate of compliance were not observed in making NRU/NRX shipments. Specifically, the NRU/NRX basket lid assembly lid collar was procured to ASME SA249 versus ASME SA312, which was required by license drawing 315-40-172, Revision 0. This noncompliance with the CoC is not safety significant because the only difference between ASME SA312 and ASME SA249 is the geometry of the standard sizes (i.e., the chemical requirements, including the tensile and strength requirements, are identical between ASME SA312 and ASME SA249).

Should the Commission require further details regarding the condition described herein, please contact me.

Sincerely,



Mr. Wren Fowler  
Director, Licensing  
Engineering

Attachments:

Attachment 1 – License Drawing 315-40-172, Rev. 0  
Attachment 2 – License Drawing 315-40-172, Rev. 1

cc. Tammy Hobbes – CNL  
cc. Mark Chapman – CNL  
cc. Rajesh Garg – CNSC

**Attachment 1**  
License Drawing 315-40-172, Rev. 0

R-219901

REV	0	CHANGES
0		INITIAL ISSUE

Security-Related Information Figure  
Withheld Under 10 CFR 2.390.

UNLESS OTHERWISE STATED SPECIFICATIONS AND REQUIREMENTS SHALL BE FOR THE U.S. MARKET.			NAC INTERNATIONAL	
GROUP	NAME	DATE	LID ASSEMBLY, NRU/NRX	
PROVIDER	<i>OK - Matt</i>	<i>9/26/10</i>		
CHECKER	<i>R. J. [Signature]</i>	<i>9/26/10</i>		
DESIGN REVISION	<i>[Signature]</i>	<i>9/26/10</i>		
ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE STATED IN OTHER NOTES	ISSUES	DATE	PROJECT 315-40	
NET ASSEMBLY 315-40-17D	QUALITY	<i>[Signature]</i>	SCALE N.T.S.	WORKER N/A
DRAWING TYPE LICENSE	QUALITY	<i>[Signature]</i>	DATE 172	REV 0

Security-Related Information Figure  
Withheld Under 10 CFR 2.390.

	
LID ASSEMBLY, NRU/NRX	
AGENCY 315-40	SEQUENCE 172
FORM N.T.S. 4/20/75A	REV 2 OF 2 04/20/75

## **Attachment 2**

License Drawing 315-40-172, Rev. 1

R-232926

REV	CHANGE
0	INITIAL ISSUE
1	REVOCATION

# Security-Related Information Figure Withheld Under 10 CFR 2.390.

<small>UNLESS OTHERWISE STATED MEMBERSHIP AND FEES LISTED BELOW ARE FOR ASSETS IN U.S.</small>					
<small>ALL MEMBERS MUST COMPLETE AND SIGN AN APPLICATION AND A SWORN STATEMENT OF FINANCIAL STATUS</small>	<small>MEMBER</small> <i>William</i>	<small>NAME</small> <i>William</i>	<small>DATE</small> <i>7-21-16</i>	<b>LID ASSEMBLY, NRU/NRX</b>	
	<small>CHIEF</small> <i>R. J.</i>	<small>DATE</small> <i>7-21-16</i>			
	<small>PROJECT</small> <i>1580</i>	<small>DATE</small> <i>7-18-16</i>			
	<small>CHIEF</small> <i>Tom</i>	<small>DATE</small> <i>7-17-16</i>			
<small>ALL MEMBERS ARE REQUIRED TO SIGN EMPLOYER'S SWORN STATEMENT</small>	<small>LICENSING</small> <i>Mar</i>	<small>DATE</small> <i>7-21-16</i>	<small>PROJECT</small> <b>315-40</b>	<small>ISSUES</small> <b>172</b>	<small>REV</small> <b>1</b>
<small>NEXT ASSEMBLY 315-40-170</small>	<small>QUALITY</small> <i>of</i>	<small>DATE</small> <i>7-21-16</i>	<small>SCALE</small> <b>N. T. S.</b>	<small>ISSUES</small> <b>N/A</b>	<small>REV</small> <b>1</b>
<small>ISSUES PER</small>	<small>LICENSE</small>	<small>QUALITY</small>	<small>SCALE</small>	<small>ISSUES</small>	<small>REV</small>

Security-Related Information Figure  
Withheld Under 10 CFR 2.390.

 NAC INTERNATIONAL		
LID ASSEMBLY, NRU/NRX		
PROJECT 315-40	DESIGN 172	REV T
SCALE N.T.S.	NUMBER 1	DR. 1 OF 2 2/14/2018