UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 14, 2019

Mr. Wren Fowler
Director, Licensing
Engineering
NAC International
3930 East Jones Bridge Road, Suite 200
Norcross, GA 30092

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9356, REVISION 1, FOR THE MODEL NO. MAGNATRAN TRANSPORTATION PACKAGE

Dear Mr. Fowler:

As requested by your application dated July 1, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19186A385), as supplemented on July 15, 2019 (ADAMS Accession No. ML19203A252), and August 7, 2019 (ADAMS Accession No. ML19221B591) enclosed is Certificate of Compliance No. 9356, Revision No. 1, for the Model No. MAGNATRAN package. The staff's safety evaluation report is also enclosed.

The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of Title 49 of the *Code of Federal Regulations* (49 CFR) 173.471 and 10 CFR 71.17.

If you have any questions regarding this certificate, please contact Bernard White of my staff at (301) 415-6577.

Sincerely,

/RA/

John McKirgan, Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9356
EPID No. L-2019-LLA-0139

Upon removal of Enclosures 3 this document is uncontrolled

Enclosures:
1. CoC No. 9356, Rev. No. 1
2. Safety Evaluation Report

cc w/encls. 1& 2: R. Boyle, DOT
J. Shuler, U.S. DOE c\o L. F. Gelder

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9356, REVISION 1, FOR THE MODEL NO. MAGNATRAN TRANSPORTATION PACKAGE, DOCUMENT DATED: August 13, 2019

DISTRIBUTION: (Closes EPID No. L-2017-NEW-0009)
DSFM r/f NMSS r/f D. Mercano C. Regan MLayton A. Dimitriadis, RI
B. Bonser, RII M. Kunowski, RIII J. Katanic, RIV, G. Warnick, RIV

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ADAMS Package No.: ML19224A072 CoC Accession No. ML19224A084
Letter/SER Accession No. ML19224A368

OFC:	NMSS/DSFM	NMSS/DSFM	NMSS/DSFM
NAME:	BWhite	SFigueroa	JMcKirgan
DATE:	8/7/19	8/8/19	8/13/19

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UNITED STATES
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SAFETY EVALUATION REPORT
Docket No. 71-9356
Model No. MAGNATRAN Package
Certificate of Compliance No. 9356
Revision No. 1

SUMMARY

By application dated July 1, 2019 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML19186A385), as supplemented on July 15, 2019 (ADAMS Accession No. ML19203A252), and August 7, 2019 (ADAMS Accession No. ML19221B591), NAC International, Inc., (NAC or the applicant) submitted a consolidated application for Certificate of Compliance No. 9356, for the Model No. MAGNATRAN package. NAC requested that the consolidated application, which corresponded to Revision 0 of the certificate of compliance for the MAGNATRAN transportation package be added to the certificate of compliance. NAC submitted the consolidated application to incorporate the safety analysis report and all supplements for the initial issuance of the certificate of compliance. While NAC did not request any changes to the package design or authorized contents in the consolidated safety analysis report (SAR), NAC did request an editorial correction in Table 8.1-1.

EVALUATION

In the consolidated SAR, NAC incorporated all supplements previously approved by U.S. Nuclear Regulatory Commission (NRC). The staff also reviewed the operating and maintenance procedures for the package and found them to be adequate.

In its application dated November 26, 2012, as supplemented, NAC performed a criticality analysis for PWR baskets and took 90% credit for the ^{10}B in the borated aluminum alloy and borated MMC plates. The effective ^{10}B density (90% of actual ^{10}B density) that was used in the criticality evaluation was 0.036 g/cm^2, 0.030 g/cm^2, and 0.027 g/cm^2 to ensure criticality safety. Table 8.1-1, “Neutron Absorber Material Minimum ^{10}B Loading,” which provides both the minimum neutron absorber actual areal density and minimum effective areal density for performing the acceptance test incorrectly listed the effective areal density for borated aluminum alloy and borated MMC as 0.334 ^{10}B g/cm^2 instead of 0.0334 ^{10}B g/cm^2, for pressurized-water reactor (PWR) fuel. All the values for boiling-water reactor (BWR) fuel were correct.

Since the NAC criticality evaluation and the NRC staff’s safety evaluation report (ADAMS Accession No. ML19105A148) both indicate that the effective areal density used was 0.030 ^{10}B g/cm^2, and that it should be 90% of the actual areal density, the NRC staff concludes that the two values stipulated in Table 8.1-1 of 0.334 ^{10}B g/cm^2 is a typographical error and should be 0.0334 ^{10}B g/cm^2. The values shown in the table below are correct and are reflected in the August 7, 2019, supplement.

Neutron Absorber Material Minimum ^{10}B Loading

Neutron Absorber Type	Required Minimum Effective Areal Density ^{10}B g/cm^2		% Credit used in Criticality Analysis	Required Minimum Actual Areal Density (^{10}B g/cm$^{2)}$	
	PWR Fuel	BWR Fuel		PWR Fuel	BWR Fuel
Borated Aluminum Alloy	0.036	0.027	90	0.04	0.03
	0.030	0.0225		0.0334	0.025
	0.027	0.020		0.03	0.0223
Borated MMC	0.036	0.027	90	0.04	0.03
	0.030	0.0225		0.0334	0.025
	0.027	0.020		0.03	0.0223
Boral	0.036	0.027	75	0.04	0.03
	0.030	0.0225		0.0334	0.025
	0.027	0.020		0.03	0.0223

CONDITIONS

The following changes have been made to the Certificate:

The consolidated application date was added to item 3(b) and the REFERENCES section.

The References was updated to include the supplements dated July 15 and August 7, 2019.

CONCLUSION

These changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9356, Revision No. 1.