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

February 6, 2015

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

SUBJECT: AUTHORIZATION FOR A ONE-TIME SHIPMENT OF THE DOUNREAY FUEL CONTENTS IN THE MODEL NO. NAC-LWT PACKAGE (TAC NO. L24972)

Dear Mr. Fowler:

As requested by your letter dated November 25, 2014, pursuant to Title 10 of the *Code of Federal Regulations* Part 71, Certificate of Compliance (CoC) No. 9225 for Model No. NAC-LWT package is amended with the following condition:

A one-time shipment of five (5) special fuel assemblies in the currently certified Model No. NAC-LWT transportation package specified as follows:

- Three (3) 4x4 square EK-10 rod arrays (two with 16 rods; one with 15 rods)
  - UO_2-Mg fuel matrix/Al clad
  - Nominal 10 wt.% U-235
  - < 120 g U-235 per array
  - The maximum amount Uranium per assembly analyzed is 1400 g
  - The maximum burnup analyzed is 20,000 MWd/MTU
  - The minimum cooling time is 28.3 years
- One (1) concentric tube ITR assembly (four square tubes)
  - U/Al alloy fuel/Al clad
  - Similar to DIDO assembly currently authorized, but uses four square "boxes" instead of cylindrical tubes
  - Nominal 90 wt.% U-235
  - < 170 g U-235 per assembly
  - The maximum Uranium per assembly analyzed is 220 g
  - The maximum burnup analyzed is 15,000 MWd/MTU
  - The minimum cooling time is 10 years

- One (1) hexagonal array (91 rods) TTR assembly
    - U/Al alloy fuel/Al clad
    - Nominal 90 wt.% U-235
    - < 400 g U-235 per assembly
    - The maximum Uranium per assembly analyzed is 500 g
    - The maximum burnup analyzed is 60,000 MWd/MTU
    - The minimum cooling time is 22.6 years

The assemblies will be transported in the currently certified Material Test Reactor (MTR) basket with the center basket opening blocked to prevent misloading.

The following additional conditions apply:

- All other conditions of CoC No. 9225 shall remain the same.
- This authorization shall expire on December 31, 2016.

If you have any questions regarding this authorization, please contact me or Norma Garcia Santos of my staff at (301) 287-9077 or (301) 287-9185, respectively.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Michele M. Sampson, Chief
Spent Fuel Licensing Branch
Division of Spent Fuel Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9225
TAC No. L24972

Enclosure: Safety Evaluation Report

cc: R. Boyle, U.S. Department of Transportation
J. Shuler, U.S. Department of Energy, c/o L. F. Gelder

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SAFETY EVALUATION REPORT

Docket No. 71-9225
Model No. NAC-LWT
Certificate of Compliance No. 9225

By letter dated November 25, 2014,[1] NAC International (NAC or the applicant) requested an extension to letter authorization to Certificate of Compliance No. 9225 for the Model No. NAC-LWT transportation package that was issued on January 10, 2012,[2] to permit a one-time shipment of five special fuel assemblies. This shipment is in the interest of U.S. national security.

This authorization is necessary to support a shipment from the Dounreay Nuclear Facility in Scotland to the Savannah River Site in the U.S. The package loading operations and the shipment schedule will be established by the U.S. Department of Energy, National Nuclear Security Administration, Foreign Research Reactor program. In 2013, NAC requested a 1-year extension to the authorization period for this one-time shipment based on the fact that the shipments may not occur in 2013. NRC extended the authorization period to December 14, 2014. On November 25, 2014, NAC requested to extend the authorization period to December 2016, since the shipment did not occur in 2014. The applicant did not request changes to the request made on November 10, 2011.[3] Therefore, the safety evaluation report issued on January 10, 2012, permitting a one-time shipment of five special fuel assemblies (i.e., Dounreay fuel contents) still applies.

Certificate of Compliance No. 9225 has been amended by letter for a one-time authorization to ship the five special fuel assemblies in a currently authorized metal test reactor basket in the Model No. NAC-LWT package. This authorization expires on December 31, 2016. Based on the statements and representations in the application, and with the conditions listed above, the staff agrees that this authorization does not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued on 2/6/15.

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[1] "Request for Timely Renewal of U.S. Nuclear Regulatory Commission (NRC) Certificate of Compliance (CoC) No. 9225 and for Approval to Use Hardware Used to Transport NRU/NRX Fuel that has Nondestructive Examination Related Non-Conformances." ADAMS Accession Number: ML14339A158.
[2] "A. Patko Letter re: Authorization For A One-Time Shipment Of The Dounreay Fuel Contents In The Model No. NAC-LWT Package (TAC L24602)." ADAMS Accession Number: ML120110022.
[3] "Submission of Request for Authorization for the NAC-LWT Cask to Allow Shipment of Dounreay Fuel Contents Supplementing Certificate of Compliance No. 9225." ADAMS Accession Number: ML11333A049.