71-9225

NAC INTERNATIONAL

Atlanta Corporate Headquarters
3930 East Jones Bridge Road
Suite 200
Norcross, GA 30092
Phone 770-447-1144
Fax 770-447-1797
www.nacintl.com

July 22, 2004

Mr. E. William Brach
Director, Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attn: Document Control Desk

Subject: Report per Requirements of 10 CFR 71.95 - Presence of Water in Cask Cavity
Docket No.: 71-9225, NAC-LWT

Reference: Certificate of Compliance (CoC) No. 9225

Dear Mr. Brach:

This report is submitted pursuant to 10 CFR 71.95 (c) documenting observation of free standing liquid in the cask cavity upon unloading of two shipments of spent fuel from NAC-LWT casks at Idaho National Engineering and Environmental Laboratory (INEEL). This condition is in violation of Item 7 of the above referenced CoC, which states "The cask must be dry (no free water) when delivered to a carrier for transport." After unloading, two casks (LWT-4 and LWT-7) were found to contain residual water. Based on the information made available at the time, NAC has estimated the volume of the water in each cask to be less than 2 liters.

BACKGROUND:

NAC was contracted by the U.S. Department of Energy (Savannah River Operations Office, Contracting Party) to provide five NAC-LWT casks for shipment of US origin fuel from various nuclear facilities in Indonesia to the Savannah River Site and to other DOE facilities under the Foreign Research Return Program (FRR Tasks # 8 and #9). NAC personnel (the same two persons at each site) provided oversight and assistance to the Indonesian shippers in loading the casks.

The shippers in charge were the National Nuclear Agency (Bandung, Indonesia) for LWT- 4 and P3TM-BATAN (Yogyakarta, Indonesia) for LWT-7. The two casks were loaded and prepared for shipment at these two facilities on March 5 and March 10, 2004, respectively, in accordance with the requirements of Items 9 and 10 of the CoC as applicable. The casks were vacuum dried as described in Chapter 7 of the NAC-LWT application. From the above facilities, the casks were transferred to seaports (LWT-4 to Cigidag, March 10, 2004 and LWT-7 to Cilicap, March 12, 2004) by the Indonesian local subcontractor to the US carrier, Shenker. Overseas transport took place aboard a Danish registry vessel owned by Poulsen Shipping. The shipment reached the United States at Charleston, South Carolina on April 21, 2004. From Charleston, the casks

NMSS01

were transported on the same day to Savannah River Site via train (CSX), and on April 26, 2004, they departed for their final destination at INEEL via Tristate carrier. The two casks arrived at INEEL on April 28, 2004. The casks were unloaded at this location during the third week of June, 2004. NAC Licensing became aware of the residual water in the casks on June 22, 2004.

After unloading, the casks were re-sealed and shipped to a licensed maintenance facility. No unusual exposures or material releases occurred as a result of the presence of residual water in the cask cavity.

EVALUATION:

The origin of the residual water is indeterminate. Under the assumption that the residual water was present during shipment, NAC has evaluated the effect of the presence of 2 liters of water in the cask cavity based on the known decay heat of the contents shipped and has determined that the effectiveness of the packaging under normal conditions of transport was not reduced. The decay heat generated by the contents of the two casks was 26 watts and <1 watt, respectively. NAC's evaluation has shown that the temperatures within the cask cavity remained well below the analyzed and approved temperature limits contained in the application. Thus, the calculated internal pressures, based on known decay heat and calculated temperatures, confirmed the cask containment boundary remained intact during shipment.

ACTION PLAN:

Since the shipment was completed without any unusual event (accident, fire, etc.), NAC will conduct a formal investigation focusing on measures to assure full compliance of future LWT shipments. NAC will evaluate the contents configuration and the LWT loading and vacuum drying processes to determine the likely origin of the residual water in the LWT cask and its potential effect on the cask performance during normal conditions of transport and hypothetical accident conditions. Based on the results of the investigation, NAC will identify and implement corrective actions, if required. NAC will submit a follow-up report to the NRC within 90 days of this communication based on the conclusions of the investigation and initiation of any corrective actions.

The condition of residual water in the cask cavity appears to be an isolated incident. NAC will advise cask users to monitor future shipments for residual water and bring any occurrences to the attention of the certificate holder for further investigation and evaluation for reporting under 10 CFR 71.95.

This communication fulfills NAC's obligation for reporting within 30 days instances in which the conditions of approval in the CoC were not observed in making a shipment.

Should you require additional information regarding the above condition and/or NAC's investigation/corrective actions, please contact me at 678-328-1321.

Sincerely,

TC Thompson

Thomas C Thompson
Director, Licensing
Engineering

cc: INEEL

Tom Thompson/NAC_Intl
07/22/2004 01:45 PM

To: Tom Danner/NAC_Intl@NAC_Intl, Tony Patko/NAC_Intl@NAC_Intl, Roy Bass/NAC_Intl@NAC_Intl, Site Transportation Services

cc: Projects Staff, Gary Tjersland/NAC_Intl@NAC_Intl, EMT (Engineering Management Team), Licensing Group, Howard Smith/NAC_Intl@NAC_Intl

bcc:

Subject: Conference Call with the NRC (Bill Brach/Stewart Brown) - 71.95 Report on Water in the LWT Cask (11:00 am, 07-22-04)

Tony Patko, Tom Danner, Roy Bass and I called the NRC to notify them that NAC was going to be submitting a report based on the requirements of 10 CFR 71.95(c) regarding residual water discovered in two LWT casks at INEL after an FRR fuel shipment from Indonesia. Bill Brach and Stewart Brown listened to NAC's description of the subject event and asked questions as the call proceeded.

NAC informed the NRC that an evaluation of the apparent condition under which the casks were shipped has concluded that there were no criticality, shielding, structural, thermal or containment concerns for the operating conditions experienced by the casks. In response to a Stewart Brown question, Tom Danner responded that for a worst-case fire accident condition for these two casks as loaded, the calculated cask cavity pressure would have exceeded the current bounding analysis pressure by a very limited amount. NAC discussed that the evaluation of the subject event is ongoing - that the cask loading procedures, and particularly the vacuum drying procedures, will be subjected to a detailed review following a root cause determination of the origination of the water. It was discussed that two casks were involved out of a total of 5 casks used in this shipping campaign and that more than one site in Indonesia was involved. NAC said that the written letter report is ready to send; Bill Brach said that it should identify the shipper, the carrier, and the dates of shipment and receipt and discovery of the water. Also, describe NAC's role in all of the shipment activities. Finally, clearly identify that NAC is in compliance with the regulatory-timeframe reporting requirements. NAC will revise the letter report to include the shipping dates, etc.

The NRC expressed their appreciation to NAC for providing this heads-up telecon before sending in the letter report.