

71-9023

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February 7, 1992  
THL/92/013/EDS

Mr. Charles E. MacDonald, Chief  
Transportation Branch  
NMSS:SGTB, Mail Stop WF4E4  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852

Dear Mr. MacDonald:

NAC hereby submits responses to comments issued by your staff on December 23, 1991, in support of an application for renewal of the NLI-10/24 cask Certificate of Compliance. Attached for your review are SAR change pages incorporating the NAC responses. To assist your review, the NRC comments and the NAC responses are also included in the attachment. Additionally, a full size drawing of the railcar is enclosed, to address legibility concerns.

Please contact me at (404) 447-1144 if you have any additional questions concerning this matter.

Sincerely,

NUCLEAR ASSURANCE CORPORATION



Todd H. Lesser  
Licensing Manager  
Engineering Design Services

THL/sb

Attachment:

Enclosure:

100041

9202190126 920207  
PDR ADOCK 07109023  
C PDR

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ATTACHMENT

NRC COMMENTS AND NAC RESPONSES

NRC COMMENT

DRAWINGS

Provide copies of the Ortner Freight Car Drawing No. OC-459-1, Rev. E. The illegible copies provided in the Consolidated Safety Analysis Report, dated November 18, 1991, are not acceptable. Note that standard size (8-1/2" x 11") drawings are permitted, provided that the text can be read.

NAC RESPONSE

A full size copy of the drawing has been provided so that the text can be read.

NRC COMMENT

OPERATING PROCEDURES

Revise the Operating Procedures to include the following:

1. The outside of the package must incorporate a feature, such as a seal, which is not readily breakable. While intact, this tamper-proof feature would be evidence that the package was not opened by unauthorized persons.
2. Specify the torque requirements for all inner and outer closure nuts and bolts.

NAC RESPONSE

1. Steps 34.a (Section C) and 3.a (Section D) have been added to the operating procedures to incorporate the tamper-proof feature of the NLI-10/24 cask into the SAR operating procedures.
2. Steps 9 and 19 (Section C) of the operating procedures have been revised to specify torque requirements for the inner closure nuts and outer closure bolts.

## Operating Procedures

grapple from fuel assembly and raise to full up position. Confirm that fuel assembly is fully seated in cask. Move refueling bridge clear of cask. Record location of fuel assembly in fuel basket.

4. Repeat steps (1) through (3) above until cask is fully loaded.

### C. Removal of Cask From Reactor Site Spent Fuel Pool and Preparation for Shipment

1. Install fuel assembly spacer plug into cask.

2. Attach three-legged sling to cask lifting yoke. Move over cask inner closure head. Attach three-legged sling to lifting eyes on outer surface of inner closure head using shackles.

3. Position inner closure head over cask and slowly lower onto cask flange. Guide pins of varying heights are located in the cask flange to provide initial and final alignment. Visually confirm that closure head is seated.

4. Lower cask handling yoke to slacken closure head cables which, in turn, locates yoke relative to cask trunnions. Engage cask trunnions and begin lifting.

5. Raise cask until closure head cavity drain valve is above water. Install all inner closure head nuts hand tight.

6. Hose cask down with demineralized water. Monitor radiation dose rate as cask emerges from pool. When all cask surfaces have been hosed, immediately move cask out of Fuel Pool to Decontamination Area. Set cask down. Remove lifting yoke and closure head lifting cables.

7. Connect hose from demineralized water supply to quick disconnect fitting on cavity fill line. Connect hose to quick disconnect fitting on cavity drain line with free end placed in pool water or contaminated drain. Open demineralized water supply valve and commence

## Operating Procedures

- flushing the cask cavity.
8. Connect demineralized water supply to auxiliary cooling inlet at top of cask. Attach hose to auxiliary cooling outlet at top of cask. Discharge end of hose to be directed to suitable drain. Open demineralized water supply valve and continue to circulate water to drain.
  9. In three or more cycles, torque all inner closure head nuts to 2780 +20/-0 ft-lbs, using a standard "star" pattern.
  10. Close demineralized water supply valve to cask cavity. Disconnect hose from demineralized water supply. Connect T-fitting with pressure gage and isolation valve to quick disconnect fitting on cavity fill line.
  11. Connect helium bottle (with pressure regulated to 10 psig) to quick disconnect on isolation valve assembly. Open fill valve and isolation valve. Open helium supply valve for a few minutes to allow helium to push out a quantity of water from the cavity.
  12. Pressurize cavity to 10 psig minimum. Remove drain hose from cavity drain line. Remove helium hose from cavity fill line. Flood closure head cavity until seal and all valves are completely covered. Hold for 10 minutes and watch for bubbles indicating leaks at closure head seal. If bubbles indicate leaks follow special instructions for correction. If not, drain closure head cavity, reconnect drain and helium supply lines.
  13. Open helium supply valve. Allow helium to force out remaining cavity water until there is no further discharge from the cavity drain line. As water is flowing from cavity measure temperature of effluent. If water temperature is below 80°F, stop flow and wait for heat in fuel to raise water temperature to 80°F. Then

**Operating Procedures**

- apply helium pressure and expel water until bubbles from discharge hose indicate that all water has been forced from cask. Close cavity fill and drain valves. Close helium supply valve. Remove helium supply line.
14. Pressure test seals in cavity fill and drain line valve base plates by pressurizing annulus between the double seal to 5 psig. Hold pressure for 10 minutes. If there is no drop in pressure seals are satisfactory.
  15. Crack cavity drain valve and bleed off excess pressure, vent to plant off gas system. Connect vacuum gauge to this valve and open it wide. Connect vacuum pump to cavity fill valve with line having vacuum gauge attached. Start pump and open valve. Evacuate cavity until pressure falls below 1" of Hg (.5 psi) on both gauges and remains there for 15 minutes. Valve off pump and hold static vacuum for 15 minutes. If pressure increase is negligible, close both valves. Reconnect helium line, open fill valve and recharge cavity with helium to just above atmospheric pressure. Close fill valve and disconnect helium line.
  16. Decontamination procedures are to be carried out while the above operations are taking place.
  17. Install valve caps on drain and fill valves. Pressure test seals in valve caps by pressurizing annulus between the double seal to 5 psig. Hold pressure for 10 minutes. If there is no drop in pressure seals are satisfactory.
  18. Attach three-legged sling to eyebolts on outer closure head. Position outer closure head on cask.
  19. Remove the eye bolts from outer head and insert threaded metal plugs. In three or more cycles, torque all bolts to 230 ±10 ft-lbs, using a standard "star" pattern.

**Operating Procedures**

20. Connect vacuum pump to closure head cavity drain valve. Connect exhaust side of vacuum pump to contaminated off gas system. Open the closure head cavity drain valve. Start vacuum pump and pump closure head cavity to 1.0 inch of mercury. Hold for 15 minutes. Operation must continue until supervisor determines that the vacuum gauge reads 1.0 in of mercury. The supervisor shall verify that the operation has been performed correctly and will sign off the appropriate check list accordingly. Stop and disconnect vacuum pump. Allow pressure in closure head cavity to return to atmospheric. Close closure head cavity drain valve.
21. Connect pressure gage and isolation valve assembly to cavity drain valve. Connect compressed air supply line to isolation valve. Open isolation valve, open cavity drain valve.
22. Open compressed air supply and pressurize closure head cavity to 10 psig. Close air supply valve. Hold pressure for 10 minutes. If there is no drop in pressure, the outer closure head seal is satisfactory. Record results on shipping document.
23. Open isolation valve to relieve pressure in cavity. Remove pressure gage and isolation valve assembly.
24. Health Physics survey cask for surface contamination and radiation dose rates. If values are higher than those specified in shipping document, continue decontamination. Record final values on shipping document.
25. Install valve cover on the closure head cavity drain valve pocket.
26. Attach lifting yoke to cask trunnions. Lift and move cask to railcar location and position cask over turning fixture bearing blocks.
27. Lower cask to railcar. Engage bearing blocks on turning fixture with trunnions on bottom end of cask. Lower cask to horizontal

**Operating Procedures**

- position, moving crane as required to keep crane cables vertical. Disengage cask lifting yoke from cask trunnions and set aside.
28. Elevate bottom end of cask using car mounted jacks. Disengage bearing blocks on turning fixture and move turning fixture to storage position.
  29. Install bottom impact structure. Lower cask using jacks until impact structure seats in saddles. Install hold down pin.
  30. Install top impact structure. Lower cask using jack until impact structure seats in saddles. Install hold down pin.
  31. Connect cask water jacket to expansion tank by connecting flexible metal hose from expansion tank to quick disconnect fitting on water jacket.
  32. Connect flexible pipe from auxiliary cooling unit to quick disconnects near top of cask. Open isolation valves. Start pump on auxiliary cooling unit No. 1. Check level in system expansion tank and fill low level mark with demineralized water, if required. Start fans on auxiliary cooling unit No. 1.
  33. Repeat Step 32 for auxiliary cooling unit No. 2 when shipping configuration includes optional redundant system. Perform operational checks per check list to assure all components are functioning properly. Turn unit No. 2 off.
  34. Close personnel barrier.
  - 34.a Install numbered seal at joining interface of personnel barrier. Record seal number on appropriate shipping document.
  35. Paste shipping placards to outside of personnel barrier as required by 49 CFR 173.399.
  36. Perform final Health Physics survey of railcar system.
  37. Return all decontaminated service equipment to storage.

**Operating Procedures**

38. Station Supervisor review shipping document for completeness and accuracy. Sign off as ready for shipment.

**D. Preparation of Cask for Unloading at Fuel Reprocessing Site**

1. Health Physics survey railcar and personnel barrier.
2. Inspect railcar and personnel barrier for damage. Note any discrepancy on shipping document.
3. Position railcar for removal of cask. Set handbrakes and block wheels against car movement in either direction.
- 3.a Inspect to verify that security seal is intact and record seal number on appropriate receiving document.
4. Open personnel barrier.
5. Health Physics smear test cask for surface contamination and adjacent surfaces of the railcar. Complete receiving portion of shipping document.
6. Disconnect water jacket expansion line from water jacket.
7. Inspect cask and tie downs for damage. Complete cask/railcar inspection portion of shipping document.
8. Remove rear ("B" End of Car) tie-down pin and raise end (bottom of cask). Remove impact limiter then lower turning fixture into position and lower cask to engage turning trunnions in turning fixture bearing blocks by retracting the rear jacks.
9. Remove front ("A" End of Car) tie-down pin and raise front end of cask. Remove front (top of cask) impact limiter.
10. Shutdown auxiliary cooling units No. 1 and No. 2. Remove inlet and outlet flexible pipes.
11. Attach lift yoke to the lifting trunnions and raise cask to vertical position. Lift cask from car and set down in designated work area. Remove lifting yoke.



**THIS PAGE IS AN  
OVERSIZED DRAWING  
OR FIGURE,  
THAT CAN BE VIEWED AT  
THE RECORD TITLED:**

**DWG. NO. OC-459-1**

**"GENERAL ARRANGEMENT 150  
TON CASK TRANSFER CAR"**

**WITHIN THIS PACKAGE...OR,  
BY SEARCHING USING THE  
DRAWING NUMBER:**

**OC-459-1**

**NOTE: Because of this page's large file size, it may be more convenient to copy the file to a local drive and use the Imaging (Wang) viewer, which can be accessed from the Programs/Accessories menu.**

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