

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900090/80-01

Program No. 51300

Company: NL Industries Incorporated
Nuclear Division
Foot of West Street
Wilmington, Delaware

Inspection Conducted: February 4-8, 1980

Inspectors:

W. M. McNeill
W. M. McNeill, Contractor Inspector
Components Section I
Vendor Inspection Branch

2-25-80
Date

Approved by:

D. E. Whitesell
D. E. Whitesell, Chief
Components Section I
Vendor Inspection Branch

2-25-80
Date

Summary

Inspection on February 4-8, 1980 (99900090/80-01)

Areas Inspected: A special inspection of the records of a spent fuel shipping cask was performed in response to a request from the transportation branch. The inspection involved thirty-four (34) inspector hours on site by one NRC inspector.

Results: Two deviations were identified.

Deviation: Records were not on file for some certified material test reports, receiving inspection, nondestructive testing, welding and welding qualification as required by the Safety Analysis Report (See Notice of Deviation, Item A). The casks were not built in accordance with the approved plans and specifications in that a weld and pressure caps were not on the casks as required by the Safety Analysis Report. (See Notice of Deviation, Item B).

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DETAILS SECTIONA. Persons Contacted

G. N. Dixon, QA/QC Manager
C. E. Williams, Assistant Manager
D. G. Maxwell, General Manager

B. Records Review1. Background Information

Recent findings indicate that some spent fuel shipping casks are not in conformance with their Certificates of Compliance. An audit of the manufacturing records was requested. The memo concerning this item requests that the fabrication records be reviewed to establish whether objective evidence exists that will demonstrate that the casks were built, inspected, and tested, in accordance with approved drawings and with the Certificates of Compliance.

2. Objectives

The objectives were to verify that the fabrication records demonstrate that the spent fuel shipping casks were manufactured and tested in conformance with their Certificates of Compliance and approved drawings. Also that all repair and rework performed were verified as having been properly evaluated and approved, and any deviations from the Certificate were properly reviewed and approved and such approval documented.

3. Method of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the Certificate of Compliance, 9010, Revision 5, and the cross referenced documents, Safety Analysis Report for The LWT 1/2 Spent Fuel Cask and the design drawings submitted to the NRC.
- b. Review of the quality and manufacturing records of the five (5) 1/2 type casks. In particular, the certified material test reports, receiving inspection reports, Material List, and Bill of Materials for a sample of twenty-three (23) components such as fasteners, lead, uranium, seals, balsa, stainless steel, and valves were inspected. The certified material test reports were verified to be in compliance with the certificate, its drawings and the Safety Analysis Report.

The receiving inspection reports were reviewed in order to verify dimensional acceptance. The load, helium, hydrostatic, shielding and thermal test reports were checked for all casks. The test conditions, acceptance criteria and test standards were verified for each test by review of reports and the shop travelers.

Nondestructive testing, radiography and penetrant testing, was inspected with the welding reports. The radiographic reader sheets, penetrant sign offs, shop travelers and Weld Control Reports for a sample of twenty(20) welds was reviewed to verify that welding and nondestructive testing was properly performed. Qualification records were reviewed on a sample of two (2) welders. All deviations identified in manufacturing of each cask were examined. Each Degradation of Specification Requirements was verified to have been reviewed properly and accepted.

4. Findings

a. Deviations

See Notice of Deviation Items A and B

b. Unresolved Items

None.

c. Comments

- (1) The Bill of Material and Parts List showed receipt and use of material although certified material test reports and receiving reports were not on file. For example, the receiving report of the uranium shell section for cask 5462-4, the certified material test report of the cask uranium base for cask 5460, and both the certified material test reports and receiving reports of the uranium base for cask 5462-5, and the uranium inner cover for cask 5382 were not on file. It should be noted that the shop travelers and Parts Lists showed that acceptable material was used. There is the possibility that the reports are mislabeled.

The radiographic reader sheets were not on file for welds 18 and 19 on cask 5460, welds 2, 4, 14, and 15 on cask 5461 and weld 14 on cask 5462-4. The weld control sheets were not on file for weld 2 on cask 5461 and welds 1, 10, 17, and 18 on

cask 5462-5. With one exception, weld 14 on cask 5462-4, the radiograph film was on file. The shop travelers and weld cards did show sign offs that the operations were performed and accepted.

The welding qualification records (Q-1) were not on file for one welder which would show qualification for procedure 99.

- (2) The drawings referenced as part of the Certificate show a 1/4" fillet weld (70514F sheet 2 of 2, Detail C) which was not performed. The drawings also show that the water jacket vent valve will have a pressure cap SMCE-4. This cap was not installed. In both of these cases the detailed shop drawings did not display the items.
- (3) NL Industries is presently shut down and not in manufacturing or fabrication at the Wilmington site and the staff has been reduced. Because of this no follow up of previously identified items was performed. The 10/24 casks have not been released by the manufacturing unit. The records have not as yet been compiled and reviewed by NL. NL was requested to notify the Region IV NRC office when the 10/24 records would be ready for an NRC review.

C. Exit Interview

The inspector met with management representatives (listed on Paragraph A) at the conclusion of the inspection on February 8, 1980. The inspector summarized the scope and findings of the inspection. The management representatives had no comment in response to each item discussed by the inspector.