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APR 12 1979

71-6698

MEMORANDUM FOR: James H. Sniezek, Director
Division of Fuel Facility and Materials
Safety Inspection
Office of Inspection and Enforcement

FROM: Richard E. Cunningham, Director
Division of Fuel Cycle and Material Safety
Office of Nuclear Material Safety and Safeguards

SUBJECT: NONCONFORMING MODEL NO. NFS-4 PACKAGINGS

At a meeting with Nuclear Assurance Corporation (NAC) on March 29, 1979, we were informed by Messrs. Ralph Best and Joe Demko, NAC, that NAC used and then sold a Model No. NFS-4 (NAC-1, Serial No. A), cask to Duke Power Company that may not meet the design approved by the Commission in Certificate of Compliance No. 6698, an apparent violation of the NRC Certificate.

Apparently, one or more of the shells is warped or bowed. The exact cause or extent of the warp or bow is unknown to NAC (and Duke Power Company) at this time. The condition was suspected by gamma scanning during construction of the package in 1974 by the cask manufacturer, EXCELCO, Silver Creek, NY.

Apparently, NAC authorized the manufacturer to increase the shielding material in the area of reduced shielding thickness by welding copper plates to the outer cask shell. This design modification was reported to the NRC in the meeting on March 29, 1979. IE was promptly notified of the information provided at the meeting. (G. Bidinger notified by telecon March 29; L. Higginbotham by memo April 2, 1979.)

The safety implications of this reported defect are not known, however, this could represent a substantial reduction in the effectiveness of the packaging.

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DATE					

James H. Sniezek

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APR 12 1979

Subsequent to the meeting, NAC informed us by letter of April 2, 1979 (copy enclosed) of a deviation during fabrication of the NFS-4 spent fuel cask. As you know, NMSS issued an order on April 6, 1979 (copies provided April 9 to IE) which prohibits the use of the Model No. NFS-4 packaging by NRC licensees until a determination is made that the packaging meets the requirements of Certificate of Compliance No. 6698. The order also requires the owner/user to evaluate deviations from the approved design, and Commission approval prior to return of the packagings to service.

As a result of the above, we request IE to:

- 1) Be represented at a meeting scheduled for 10:30 a.m., April 17, 1979 in the Willste Building, 5th floor conference room, to discuss the physical measurements of existing casks cavities that are planned to assist in determining if existing casks meet the Certificate of Compliance for the package design. Representatives of NAC, NFS, and Duke Power Company are planning to attend.
- 2) Investigate and determine who was responsible for authorizing an apparent deviation from an NRC Certificate of Compliance on the Model No. NFS-4 (NAC-1, Serial A) packaging. Advise NMSS of enforcement action to be taken as a result of this investigation, if any.
- 3) Provide NMSS with a summary of IE inspection findings related to the fabrication and use of these package designs.

Any further information relevant to the above will be furnished to IE when it becomes available to NMSS.

Original Signed By
Richard E. Cunningham

Richard E. Cunningham, Director
Division of Fuel Cycle and
Material Safety, NMSS

Enclosures:

1. Ltr 4/2/79 NAC to NRC
2. Order to Registered Users of Model No. NFS-4 Packaging

Distribution w/o encls:

WJDircks	CEMacDonald
RECunningham	RHodegaarden (2)
TFCarter	Docket File
DANusshauer	NMSS R/F
	FCTE R/E

OFFICE →	FCTR <i>RHO</i>	FCTR <i>AM</i>	FCMS <i>AM</i>	FC <i>AM</i>	FC <i>AM</i>
SURNAME →	RHodegaarden	vt CEMacDonald	DANusshauer	TFCarter	RECunningham
DATE →	04/12/79	04/12/79	04/12/79	04/12/79	04/12/79

71-6693



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

MAY 9 1979

SSINS 50-269

MEMORANDUM FOR: G. H. Bidinger, Division of Fuel Facilities and Material Safety Inspection, I. E.

THRU: *PJB* P. T. Burnett, Acting Chief, Nuclear Support Section No. 1, I. E., Region II

R R. C. Lewis, Acting Chief, Reactor Operations and Nuclear Support Branch, I. E., Region II

FROM: H. L. Whitener, Reactor Inspector, Nuclear Support Section No. 1, I. E., Region II

SUBJECT: MEASUREMENT OF INNER CAVITY OF NAC FUEL SHIPPING CASK NAC-1B

At the request of IE Headquarters I witnessed the measurement of fuel shipping cask NAC-1B on April 25, 1979. This inspection included activities as follows:

1. Reviewed the measurement procedure.
2. Verified that procedure was followed.
3. Observed calibration check of dial gauges with micrometer reading for a reference distance.
4. Observed installation of measurement equipment.
5. Observed that data was recorded at six inch increments from top to bottom of cask.
6. Observed recheck of four positions.
7. Verified that a second person was positioned to confirm gauge readings of the first data reader.
8. Personally read three dial gauges while gauges were at the bottom position in the cask (longest reading distance) to verify that gauges could be read.


Review of measurement data subsequent to the testing indicated that the first measurement for the 102.5 inch position did not agree with the recheck data. The licensee discussed this point with NAC and said that the 102.5 inch recheck position was erroneously recorded. The actual position rechecked was 72.5 inches. Data at 72.5 inch position appear consistent. Data was as follows:

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MAY 9 1979

<u>Dial Gauge</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
1st measurement of 102.5	.209	.295	.315	.278	.200	.152
2nd measurement of 102.5	.239	.298	.288	.251	.198	.152
1st measurement of 72.5	.240	.298	.288	.252	.198	.150


H. L. Whitener
Reactor Inspector

Enclosure 1:
Measurement Data Sheet

cc: R. D. Martin, Chief NSS 1, Region II

1630 hours 4/25/79



T. J. ...
James ...

NAC-43 Cask Straightness & Ovality Measurements

Distance from top of cavity (inches)	A (150°)	B (90°)	C (30°)	D (230°)	E (270°)	F (210°)
4.5	.265	.228	.251	.264	.265	.260
6.5	.285	.256	.269	.276	.245	.214
12.5	.240	.240	.286	.264	.206	.207
18.5	.207	.241	.284	.266	.213	.201
24.5	.195	.245	.275	.268	.256	.187
30.5	.185	.251	.314	.272	.240	.170
36.5	.169	.270	.308	.272	.224	.173
42.5	.179	.280	.281	.281	.208	.153
48.5	.188	.295	.279	.270	.193	.163
54.5	.242	.296	.282	.316	.205	.160
60.5	.230	.302	.278	.285	.193	.182
66.5	.231	.305	.278	.258	.200	.181
72.5 →	.240	.298	.283	.252	.198	.150
78.5	.235	.296	.298	.256	.200	.160
84.5	.226	.301	.310	.251	.193	.169
90.5	.208	.309	.289	.262	.225	.157
96.5	.202	.288	.279	.275	.238	.161
102.5 →	.209	.295	.315	.278	.200	.152
108.5	.211	.291	.305	.285	.210	.145
114.5	.220	.302	.300	.300	.183	.128
120.5	.238	.292	.298	.279	.195	.155
126.5	.235	.279	.302	.269	.199	.170
132.5	.242	.288	.315	.283	.193	.190
138.5 →	.222	.251	.298	.304	.185	.199
144.5	.227	.236	.292	.338	.212	.210
150.5	.198	.230	.275	.315	.232	.205
156.5	.187	.230	.280	.259	.250	.201
162.5 ✦	.209	.235	.298	.288	.248	.212
168.5	.239	.232	.284	.288	.268	.223
174.5	.229	.246	.303	.279	.258	.200
roducibility						
162.5	.209	.238	.297	.291	.245	.208
138.5	.223	.250	.293	.309	.186	.195
4.5	.239	.218	.288	.251	.198	.152
4.5	.265	.226	.252	.215	.214	.211

72.5



REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Hardin

MAY 10 1979

SSINS 50-269
50-270
50-287

MEMORANDUM TO: Files

THRU:

R R. C. Lewis, Acting Chief, Reactor Operations and Nuclear Support Branch, Region II

W F. S. Cantrell, Acting Chief, Reactor Projects Section No. 2, Reactor Operations and Nuclear Support Branch, Region II

FROM:

A. K. Hardin, Reactor Inspector, Reactor Projects Section No. 2, Reactor Operations and Nuclear Support Branch

SUBJECT:

TRIP REPORT - OCONEE 1, 2, and 3 - DUKE POWER COMPANY

During the period May 3, 1979 through May 7, 1979, I was assigned to perform inspections on each shift at Oconee 1, 2, and 3. In addition, during that period Oconee was to conduct a test of the stability of a modified emergency feedwater system which was to be observed by the inspector, and Nuclear Assurance Corporation (NAC) personnel were to make measurements of the NAC-1 fuel shipping cask. The measurements were to be observed by the inspector.

1. INSPECTION

Oconee 1 and 2 operated in a normally expected manner at or close to 100 percent power until the plants were reduced to 15% power in preparation for the Emergency Feedwater Flow Test conducted on May 7, 1979. Unit 3 was on Cold Shutdown preparing to refuel.

An inspection was conducted on each shift and consisted of reviewing logs, instrument readings, observation of equipment and discussions with personnel. No deviations or noncompliance was observed.

2. EMERGENCY FEEDWATER TEST

The licensee was required to modify and test the ability of the emergency feedwater pumps to start automatically and provide adequate feedwater to Units 1 and 2 and determine feedwater stability under different conditions.

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MAY 10 1979

Test No. TT/O/A/325/01 was conducted on the morning of May 7, 1979. The test went smoothly and acceptance criteria of Section 11.0, 11.1 and 11.2 of the procedure was met. Particular attention was given to observation of operator performance during the test. Operators were able to control flow perturbations on the system without significant difficulty. Process parameters such as steam generator levels, reactor coolant temperatures, and pressurizer level remained within acceptable boundaries throughout the test.

3. OBSERVATION OF NAC-1 FUEL SHIPMENT CASK MEASUREMENTS

On May 6, 1979, the inspector observed personnel from Nuclear Assurance Corporation take certain measurements on the inside diameter of the NAC-1 cask. The general purpose of the measurements was to determine out-of-roundness and bow of the cavity.

Procedure "NFS-4/NAC-1, Cavity Measurements" was used to make the measurements. The inspector verified that the procedure was followed. In addition, the inspector:

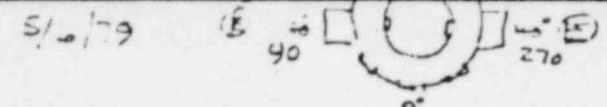
- a. Observed all-measurements on the cavity.
- b. Observed reproducibility measurements.
- c. Verified, by spot checking, measurements made on the cavity.



A. K. Hardin, Reactor Inspector
Reactor Operations and Nuclear
Support Branch



NAC-1A Cask Straightness & Ovality Measurements



10000-15
 REP
 10000-15

Distance from
 Top of Cavity
 (microns)

	A (30°) (150°)	B (90°)	C (150°) (30°)	D (270°) (90°)	E (270°)	F (30°) (150°)
4.5	.473	.516	.496	.501	.496	.494
6.5	.506	.556	.531	.526	.469	.522
12.5	.520	.550	.483	.510	.412	.477
18.5	.513	.568	.490	.472	.386	.452
24.5	.489	.613	.538	.459	.360	.425
30.5	.465	.650	.582	.458	.333	.403
36.5	.468 ✓	.683	.613	.450	.314	.373
42.5	.468	.703	.646	.448	.292	.348
48.5	.445	.728	.693	.471	.260	.314
54.5	.440	.768	.720	.462	.248	.266
60.5	.453	.825	.752	.451	.251	.219
66.5	.462	.852	.749	.452	.219	.191
72.5	.498	.899	.752	.426	.198	.165
78.5	.492	.931	.778	.439	.185	.124
84.5 →	.502	.932	.778	.430	.166	.105
90.5	.510	.946	.781	.418	.160	.103
96.5	.478	.931	.808	.458	.177	.078
102.5	.459	.925	.812	.465	.175	.080
108.5	.415	.882	.842	.486	.202	.070
114.5	.391	.858	.872	.482	.248	.091
120.5	.389	.812	.882	.448	.274	.113
126.5	.388	.785	.870	.440	.291	.138
132.5	.369	.756	.820	.457	.312	.175
138.5	.402	.742	.749	.441	.311	.234
144.5 →	.444	.752	.676	.425	.293	.266
150.5	.439	.692	.635	.459	.319	.303
156.5	.446	.640	.585	.472	.318	.355
162.5	.432	.572	.559	.520	.356	.400
168.5	.434	.499	.538	.530	.459	.445
174.5	.450	.501	.568	.542	.476	.441
reproducibility						
144.5	.412	.760	.670	.400	.297	.368
24.5 ? →	.637?	.929	.742	.420	.182	.225
4.3	.500	.553	.523	.522	.510	.513