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QA

April 16, 1990

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Waterford 3 SES
Docket No. 50-382
License No. NPF-38
NRC Inspection Report 89-32

Gentlemen:

Louisiana Power & Light (LP&L) hereby submits in Attachment 1 the supplemental information requested in your letter of March 16, 1990.

If you have any questions concerning this information, please contact L.W. Laughlin at (504) 464-3499.

Very truly yours,

RFB/DMU/ssf
Attachment

cc: Messrs. R.D. Martin, NRC Region IV
F.J. Hebion, NRC-NRR
D.L. Wigginton, NRC-NRR
E.L. Blake
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NRC Resident Inspectors Office

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ATTACHMENT 1

SUPPLEMENTAL RESPONSE TO VIOLATION NO. 8932-01

In a telephone call to LP&L's Mr. R.G. Azzarello on March 6, 1990, the NRC and various plant personnel discussed Violation 8932-01 and the subsequent response. During this conversation, the NRC requested supplemental information about the reactor vessel nut examinations performed during the second refueling outage. The NRC also requested information about the reactor vessel nut examinations during Refueling Outage 3. The NRC's request for this information was documented in their letter dated March 16, 1990. This letter requested that LP&L explain:

- 1) your demonstrated ability in the October 1989 outage to perform magnetic particle examinations in at least two directions for the threaded section of the reactor vessel head closure nuts;
- 2) the identification in your Inservice Inspection Plan that a partial examination of the nuts was not applicable; and
- 3) the reason why an alternate surface examination technique was not employed during the 1988 refueling outage, if the examiners believed a two direction magnetic particle examination could not be performed.

Response to item (1)

An MT examination is used to detect surface and subsurface discontinuities in ferromagnetic material. The method involves magnetizing the area to be examined and applying ferromagnetic particles to the surface. The particles will form patterns on the surface where cracks and other discontinuities cause distortions in the normal magnetic field. A strong magnetic field within the examination area is important to achieve meaningful examination results. A weak magnetic field may cause indications to be missed or provide inconclusive results.

The electromagnetic yoke used at Waterford 3 to perform MT examinations has two legs that are placed in contact with the component to be examined. The yoke induces a magnetic field between the legs, parallel to the yoke.

When examining the inner diameter (ID) of the reactor vessel nuts, the nut configuration may prohibit the yoke from being adequately positioned to perform the axial examination. Although the yoke has adjustable legs, there may not be enough adjustment to allow its positioning inside the nut. A determination must then be made by the MT examiner as to whether the yoke can be properly positioned and if the field strength is adequate to perform a credible examination.

During Refueling Outage 2, the MT examiner determined an axial examination was not possible due to nut configuration and documented such on the examination data sheet. During Refueling Outage 3 and after the NRC had questioned the previous reactor vessel nut inspections, the MT examiner performed an examination of the nut ID in two directions.

It should be noted that the validity of the reactor vessel nut examination performed during Refuel 2 was concurred with by the Westinghouse Level II inspector, the LP&L Level III inspector and the Authorized Nuclear Inservice Inspector (ANII) as indicated by their signatures on the examination data sheet.

In accordance with ASME Section XI, Article IWA 2120, it is the duty of the ANII to verify that the nondestructive examination methods used follow the techniques specified in the Code. This article also states that examination records shall be certified by the ANII only after verifying that the requirements have been met and the records correct. With his signature, the ANII acknowledges that the reactor vessel nut ID examination performed during the second refueling outage was performed in accordance with and satisfied the examination requirements of the Code.

Furthermore, the nut ID examination that was performed was in the critical direction. It is expected that any surface indications which may occur on the ID of the nut will be parallel to the threads, i.e., indications of thread failure. The inspection performed on the nut ID during Refuel 2 was in the circumferential direction (with the yoke perpendicular to the threads). Therefore, any thread damage would have been detected by the examination performed.

The examination that was not performed would detect surface indications in the axial direction, i.e., perpendicular to the threads. Given the direction of forces applied to the nuts, it is highly unlikely the threads would fail in an axial direction. Therefore, the examination of the nut ID most "important to safety" was performed.

Response to Item (2)

Partial examinations are identified when the required examination, which is specified in ASME Section XI, cannot be performed. The required examination method is determined by the applicable examination table in ASME Section XI which for reactor vessel nuts is IWB-2500-1, Category B-G-1, Code Item B6.10. The required extent of examination is defined by the applicable figure in ASME Section XI. For Reactor Vessel nuts, there is no figure.

In the Ten Year Inservice Inspection Program, the yes or no designation in the partial examination column on the "Items Selected for Examination" sheet signifies whether or not the required examination volume or area, as specified on the applicable figure, was examined. In this case, as stated above, there is no figure defining what areas of the reactor vessel nut are to be examined. With no examination volume or area specified, the examination was not considered to be a partial, hence the "no" in the "partial exam" column.

Response to Item (3)

Alternate examination methods/techniques are employed when a limitation exists and the specified examination cannot be performed. If a specific area or volume for examination would have been specified in Section XI, and that area could not have been examined with the standard methodology/technique, alternate methods/techniques would have been employed to maximize the obtainable coverage.

During the March 6, 1990 telephone conversation, the examination of reactor vessel nuts in the direction not examined during the 1988 refueling outage was also discussed. As indicated in this conversation, these nuts (reactor vessel nuts 01-N-01 through 01-N-18) will be examined only in the direction not previously examined during the next scheduled examination of reactor vessel nuts. In accordance with the ten year plan, the next examination is required during the third inspection period (Refuels 5, 6 and 7). The examinations are tentatively scheduled for Refuel 5, but will be performed no later than Refuel 7.

Future examinations of the reactor vessel closure nut ID will be performed in two directions. Although ASME Section XI does not require examination of the nut ID, LP&L agrees that this is the conservative approach. The Waterford 3 Ten Year Program will be revised to address this examination.