

# CATEGORY 1

## REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250  
50-251.Turkey Point Plant, Unit 4, Florida Power and Light C 05000251  
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Records Management Branch (Document Control Desk)

SUBJECT: Request relief from certain requirements of ASME Section XI,  
1992 Edition.Relief request 20 re exemption of tendon insp,  
encl.

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TITLE: OR Submittal: Inservice/Testing/Relief from ASME Code - GL-89-04

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FPL

APR 09 1999

L-99-075  
10 CFR 50.55a

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

Re: Turkey Point Units 3 and 4  
Docket Nos. 50-250 and 50-251  
Inservice Inspection Program  
Third Ten Year Summary  
Relief Request No.20

Effective September 9, 1996, the NRC amended 10 CFR 50.55a to incorporate by reference the 1992 Edition with the 1992 Addenda of Subsection IWL, "Requirements for Class CC Concrete Components of Light-Water Cooled Power Plants," of Section XI, Division 1, of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code (ASME Code). The revisions to 10 CFR 50.55a were designed to assure that the critical areas of containments are routinely inspected to detect and take corrective action for defects that could compromise a containment's structural integrity. Implementation of the revised requirements for containment examination is required by September 9, 2001, five years from the effective date of the rule.

In accordance with 10 CFR 50.55a(a)(3), Florida Power and Light Co. (FPL) is requesting relief from certain requirements of ASME Section XI, 1992 Edition. Relief Request No. 20, "Exempt Tendon Inspection," requests relief from ASME Section XI Code, 1992 Edition, Paragraph IWL-2521.1(c) which requires that each exempted tendon be examined in accordance with IWL-2524 and IWL-2525 to the extent that the end anchorages of the exempted tendons are accessible either during operation or at an outage.

Tendon caps located near and above the discharge piping for the main steam safety and atmospheric dump and the steam generator blowdown to atmosphere are considered inaccessible during unit operation as a result of safety concerns for inspection personnel therefore, they are exempted. Relief is requested from the requirement to perform examinations at the inaccessible end of exempted tendons, when the end of the tendon becomes accessible during an outage. Tendon inspection requires the placement of a large crane on the containment equipment hatch access ramp to lift inspection equipment and personnel to the top of the containment building. The ramp cannot handle outage and tendon inspection activities concurrently. Preparation for inspection of exempted tendons during an outage cannot commence until the hatch is closed and the ramp is cleared of outage equipment. With a projected inspection time of seven days, completion of the exempted tendon end anchorage inspection will result in a minimum of five days extension in the outage schedule at a total cost of approximately \$925,000 per unit.

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L-99-075

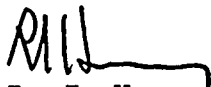
Page 2

Since the examinations of substitute tendons provide sufficient information to assess the performance of the tendon system subject to similar environmental conditions and prestressing requirements, inspection of exempted tendons which become accessible during the outage in accordance with IWL-2521.1(c) is a burden without commensurate benefit in assessing the inservice condition of the post-tensioning system.

Approval of Relief Request No. 20 is requested by October 1, 1999, to support preparations for the 30<sup>th</sup> year tendon inspection scheduled for the Spring of 2001.

Should there be any questions concerning this submittal, please contact us.

Very truly yours,



R. J. Hovey  
Vice President  
Turkey Point Plant

OIH

Attachment

cc: Regional Administrator, Region II, USNRC  
Senior Resident Inspector, USNRC, Turkey Point Plant



ATTACHMENT TO L-99-075

FLORIDA POWER AND LIGHT  
TURKEY POINT UNITS 3 & 4

RELIEF REQUEST NUMBER 20  
EXEMPT TENDON INSPECTION

RELIEF REQUEST NUMBER 20 FOR EXEMPT TENDON INSPECTION

I. Component Identification:

Table IWL 2500-1, Category L-B, Unbonded Post-Tensioning System, Item Numbers L2.30, L2.40 and L2.50.

Tendon caps located near and above the discharge piping for the main steam safety and atmospheric dump and the steam generator blowdown to atmosphere are considered inaccessible during unit operation as a result of safety concerns for inspection personnel as determined by the plant safety department (see photos on Page 5). These tendon caps are located at Buttress #5 and west side of Buttrresses #4 and #6 and the ring girder above the Main Steam and Feedwater platforms. Randomly selected tendons at those locations are designated as exempted tendons and substitute tendons are selected for examination in accordance with IWL-2521.1 requirements. Approximately 142 hoop tendons and 65 dome tendons at each unit have one end considered inaccessible due to personnel safety. This constitutes 29% of hoop tendons and 39% of dome tendons. Random selection of examination tendons is likely to yield up to three tendons at each unit with one end inaccessible due to personnel safety concerns (during the 25<sup>th</sup> year tendon surveillance, two tendons at each unit were exempted due to personnel safety concerns).

II. Examination Requirements:

ASME Section XI, 1992 Edition, Paragraph IWL-2521.1(c) requires that each exempted tendon be examined in accordance with IWL-2524 and IWL-2525 to the extent that the end anchorages of the exempted tendon are accessible either during operation or at an outage.

IWL-2524 requires a visual examination of the tendon anchorage areas (anchorage hardware, including bearing plates, anchorheads, wedges, buttonheads, shims, and the concrete extending outward a distance of 2 feet from the edge of the bearing plate), and documentation of free water contained in the anchorage end cap as well as any which drains from the tendon during the examination process.

IWL-2525 requires the collection of samples of the corrosion protection medium for laboratory analysis for reserve alkalinity, water content, and concentrations of water soluble chlorides, nitrates, and sulfides.

### III. Relief Request:

Relief is requested from the requirement to perform examinations as required by IWL-2524 and IWL-2525, Table IWL 2500-1, Item Numbers L2.30, L2.40 and L2.50 at the inaccessible end of exempted tendons during an outage when the end of the tendon becomes accessible.

Examinations at the other end of exempted tendons, accessible during plant operation, are not affected by this request.

### IV. Basis for Relief:

At the Turkey Point plant, tendon inspection requires the placement of a large crane on the containment equipment hatch access ramp to lift inspection equipment and personnel to the top of the containment building (see photos on Page 6). The plant layout around the Unit 3 and Unit 4 containment buildings is such that there is no other space to accommodate a large crane. The containment buildings are surrounded by the Auxiliary Building and Fuel Handling Buildings on the east side, and the Turbine Building on the west side. The north and south sides, except for the ramp areas, are obstructed by the Control Building, the Unit 3 Emergency Diesel facilities and the Feedwater platform enclosures.

During refueling outages the ramps are used to locate security and health physics control facilities, and tool storage containers (see photos on Page 7). These facilities are located on the ramp with just enough space for a forklift truck to access the equipment hatch. The ramp cannot handle outage and tendon inspection activities concurrently. Preparation for exempted tendon inspection during an outage would have to start after the hatch is closed and the ramp is cleared of outage equipment. Based on the 25<sup>th</sup> year tendon inspection performed by VSL Corporation, the time required for mobilization, inspection of exempted tendons and demobilization for each unit would be seven days. At an estimated cost of \$8,500 per day for the inspection, the cost for each unit would be approximately \$59,500. This cost does not include the cost of personnel badging and shipping equipment back to the site. In addition, the unit would not be back in operation until after inspections are completed, resulting in a minimum of five days extension in the outage schedule, at a cost of approximately \$185,000 per day for a total cost of approximately \$925,000 per unit.



Alternative Examinations:

The accessible end of exempted tendons shall be examined in accordance with IWL-2524 and IWL-2525. Tendons that are substituted for exempted tendons shall be examined in accordance with IWL requirements.

V. Justification for Relief:

The examinations of substitute tendons provide sufficient information to assess the performance of the tendon system subject to similar environmental conditions and prestressing requirements.

The main purpose of examinations to be performed during an outage (IWL-2524 and IWL-2525) is to look for signs of corrosion in the tendon anchorage components and to assess the condition of the corrosion prevention medium. During scheduled tendon inspections, these examinations are performed at many tendons, and only relatively few are exempted due to personnel safety concerns. For instance, during the 25<sup>th</sup> year tendon inspection at Turkey Point, tendon anchorage components were examined at 35 tendon ends in Unit 3 and 39 tendon ends in Unit 4, and only two tendon ends in each unit were exempted due to personnel safety concerns (one end of tendons 1D8 and 42H71 in Unit 3, and one end of tendons 35H79 and 51H42 in Unit 4). As stated in Section I, random selection during future inspections is likely to yield up to three tendons at each unit with one end inaccessible due to personnel safety concerns. This represents only 15% of the total number likely to be examined. The population of tendons that are non-exempt plus the substitute tendons provide sufficient information to assess the performance of the entire system given that they are subject to similar environmental conditions and prestressing requirements as exempted tendons. To date, no significant anomalies concerning the hoop tendons and dome tendons have been noted in respect to corrosion or corrosion prevention medium.

Based on the preceding, the inspection of exempted tendons during the outage in accordance with IWL-2521.1(c) is a burden without commensurate benefit in assessing the inservice condition of the post-tensioning system.

Attachment to  
L-99-075  
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Implementation Schedule:

Unit 3 and Unit 4 30<sup>th</sup> year tendon inspection and later inspections.

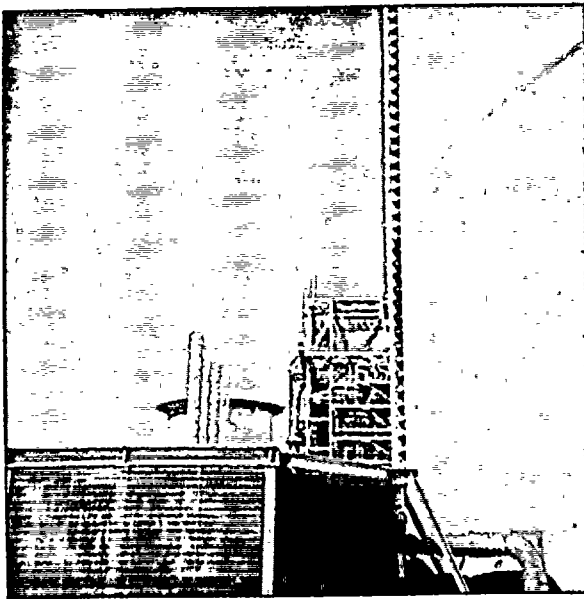
Unit 3 and Unit 4 ramps are similar in size and the ramps are used extensively during refueling outages and tendon inspections.

VI. Status:

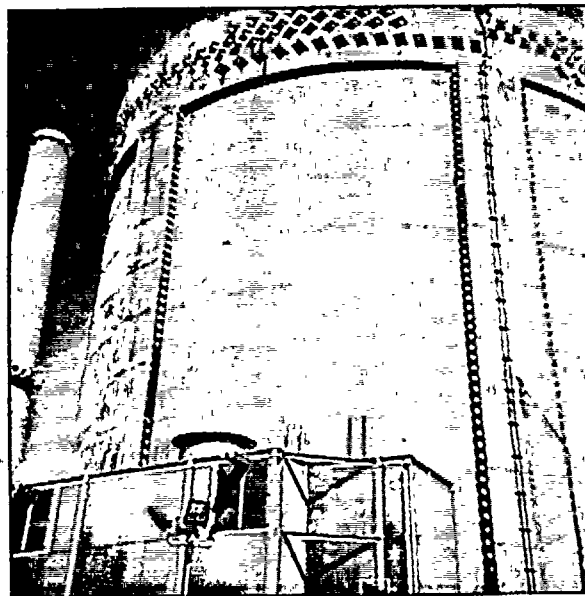
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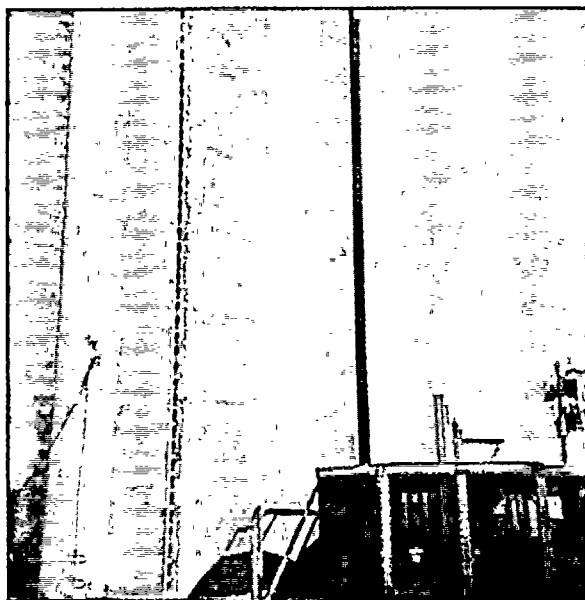
**Photos of Units 3 and 4 Containment Buildings and main steam safety  
and atmospheric dump pipes.**



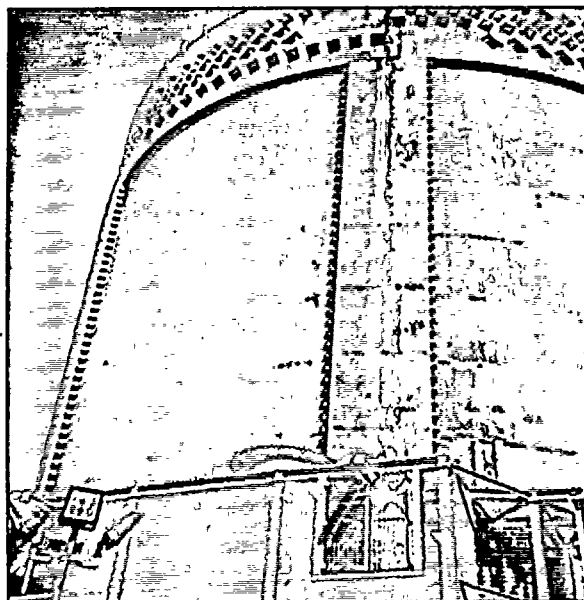
UNIT 3  
VIEW LOOKING NORTH



UNIT 3  
VIEW LOOKING EAST

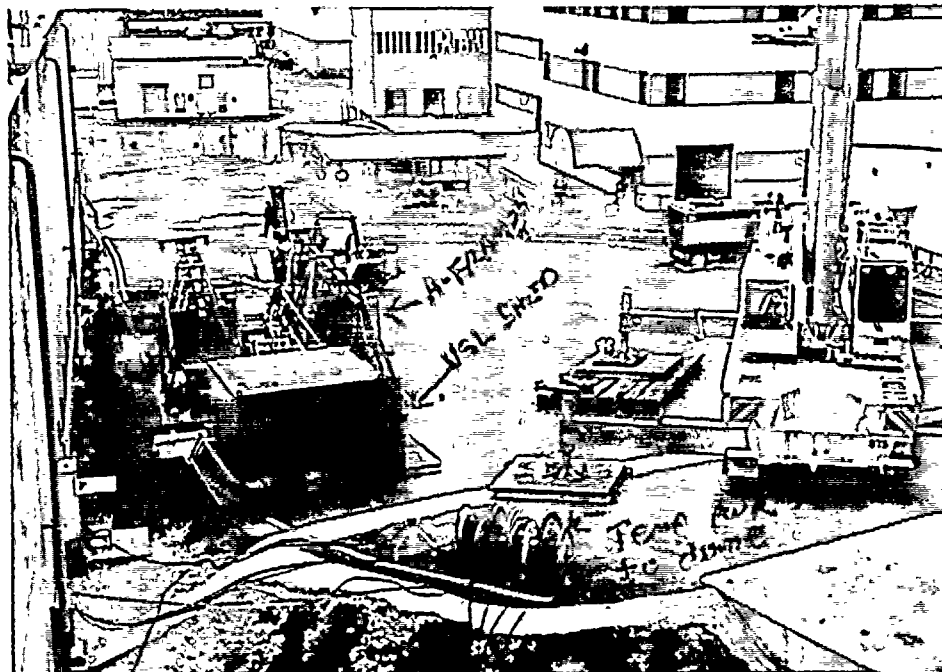
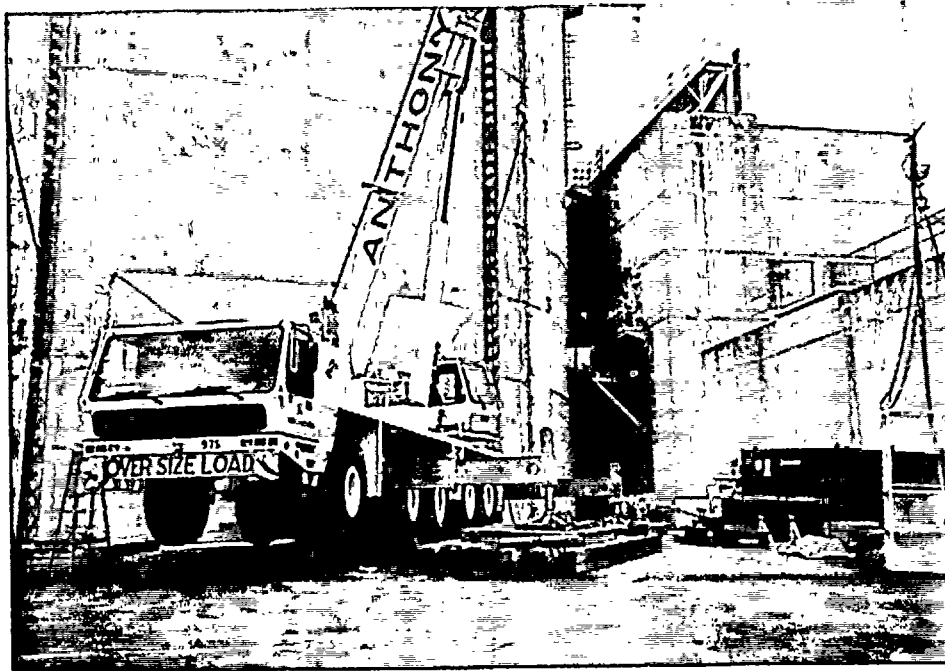


UNIT 4  
VIEW LOOKING SOUTH



UNIT 4  
VIEW LOOKING EAST

Photos of crane and/inspection equipment on Unit 4 ramp during 25<sup>th</sup>  
year tendon inspection.





- Photos of security and health physics facilities, and tool containers on Unit 3 ramp during Cycle 17 refueling outage.

