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 FACIL:50-250 Turkey Point Plant, Unit 3, Florida Power and Light C 05000250
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SUBJECT: Responds to NRC Bulletin 89-001, "Failure of Westinghouse
 Steam Generator Mechanical Plugs."

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FPL

P.O. Box 14009, Juno Beach, FL 33408-0420

JUNE 19 1989

L-89-220

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

Gentlemen:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
NRC Bulletin No. 89-01
Failure of Westinghouse Steam Generator Mechanical Plugs

NRC Bulletin No. 89-01, "Failure of Westinghouse Steam Generator Tube Mechanical Plugs," issued on May 15, 1989, requested that licensees determine whether Westinghouse mechanical plugs from heat numbers 3279, 3513, 3962 and 4523 are installed in their Steam Generators. If plugs from these heats are installed then licensees are to implement an action plan that assures these plugs will continue to provide Reactor Coolant System (RCS) pressure boundary integrity under normal operating, transient and postulated accident conditions. These actions must comply with General Design Criteria 14 and 31 of 10 CFR 50, Appendix A and the quality assurance requirements of 10 CFR 50 Appendix B.

FPL responses to each of the bulletin action requests are included as an attachment to this letter. Should there be any questions about this information, please contact us.

Very Truly Yours,

C. O. Woody

C. O. Woody
Acting Senior Vice President - Nuclear

COW/DRP/gp

Attachment

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

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STATE OF FLORIDA)
) ss.
COUNTY OF PALM BEACH)

O. F. Pearson being first duly sworn, deposes and says:

That he is Vice President, of Florida Power and Light Company, the Licensee herein;

That he has executed the foregoing document; that the statements made in this document are true and correct to the best of his knowledge, information and belief, and that he is authorized to execute the document on behalf of said Licensee.

O. F. Pearson

O. F. Pearson

Subscribed and sworn to before me this

19 day of June, 1989.

Robert S. Economy

NOTARY PUBLIC, in and for the County of
Palm Beach, State of Florida

Notary Public, State of Florida
My Commission Expires June 1, 1993
Bonded Thru Troy Fair - Insurance Inc.

My Commission expires _____

ATTACHMENT

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
NRC Bulletin No. 89-01
Failure of Westinghouse Steam Generator Mechanical Plugs

ACTION REQUESTED:

1. Addressees are requested to verify that information contained in References 1 and 2 relating specifically to their plants is correct for plugs supplied from heat numbers 3279, 3513, 3962, and 4523. The specific information to be verified is the number of Westinghouse mechanical plugs installed in the hot and cold legs broken down by steam generator number, heat number, and date of installation.

FPL Response:

FPL has verified that the information contained within the above referenced documents is correct. In particular, 6 plugs from heat 3962 are installed in Turkey Point Unit 3 Steam Generator (S/G) C, 3 in the Hot Leg and 3 in the Cold Leg. Two plugs from heat 4523 are installed in Turkey Point Unit 4 S/G A, 1 in the Cold Leg and 1 in the Hot Leg. No plugs from heats 3513, 4523 and 3279 are installed in Unit 3 Steam Generators. No plugs from heats 3279, 3513 and 3962 are installed in Unit 4 Steam Generators.

2. Addressees are requested to take the following actions, to be implemented initially during any refueling outage or extended outage (greater than four weeks) which ends 30 days or more following receipt of this bulletin and during all future refueling outages.
 - a) Steam generator tube plug lifetime for plugs from heats 3279, 3513, 3962, and 4523 should be estimated using the methodology from References 1 and 2 and should be based on the Millstone Unit 2 benchmark subject to any corrections per item 1 above. Lifetime estimates for plugs fabricated from heat 4523 are based on the Farley Unit 2 benchmark. These estimates should be adjusted to reflect the Millstone Unit 2 benchmark using the methodology described in Section 4.1.2 of Reference 1.

FPL Response:

Turkey Point Unit 3 - Six plugs of heat 3962 were installed in Unit 3 in June 1987. They have accumulated 264.75 effective full power days (EFPD) since installation as of March 31, 1989. The maximum number of EFPD remaining until the next refueling outage is 195.25

Thus, the plugs will experience 460 EFPD during the current cycle.

Information received from Westinghouse (Reference 1) indicates that the worst case limit for minimum ligament thickness is 802 EFPD. Based upon this information, these plugs will not be subject to the length of service determined by Westinghouse to be necessary to obtain the minimum ligament thickness for the type of plugs under consideration.

Turkey Point Unit 4 - Two plugs of heat 4523 were installed in Unit 4 during November 1988. Westinghouse performed an evaluation (Reference 2) based upon the Millstone Unit 2 benchmark and determined that the worst case plug (hot leg) had an operational limit of 541 EFPD. The maximum projected EFPD for Unit 4 is 450 EFPD for the current cycle. These plugs will not be subject to the length of service determined by Westinghouse to be necessary to obtain the minimum ligament thickness.

- b) Addressees should implement appropriate remedial actions (i.e., repair and/or replacement) for all plugs whose estimated life-times in 2a, above do not extend to the next refueling outage.

FPL Response:

The calculated lifetimes of all installed plugs extend beyond the next refueling outage. These calculations were performed in accordance with Bulletin 89-01 requirements. Therefore, the subject plugs installed in Turkey Point Units 3 and 4 S/G's have sufficient life remaining to continue power operations until the next refueling outage for each unit. In accordance with the bulletin requirements, no remedial actions are warranted or anticipated.

- c) Prior to any plug repairs or replacement, addressees are reminded that their responsibilities under ALARA require analysis of the various plug repair or replacement methods available to determine which method will result in the lowest overall personnel radiation exposure while still remaining cost-effective. In choosing a plug repair or replacement method, the licensee should consider the accessibility of the plugs and the dose reduction benefit of using robotic manipulators. Prior to plug repair or replacement, the licensee should consider steam generator decontamination and/or local shielding to reduce working area dose rates.

FPL Response:

The items noted for consideration will be reviewed prior to the work to remove the tube plugs. The review will be conducted in accordance with our ALARA Program procedure O-HPA-006, "ALARA Program".

- d) & e) Installation of Westinghouse mechanical plugs from heats 3279, 3513, 3962, and 4523 should be discontinued.

Westinghouse mechanical plugs removed from steam generators, regardless of heat number, should be examined for PWSCC on a sample basis. Addressee's should maintain a record of these examinations and the results should be provided to Westinghouse to improve the database concerning the susceptibility of plugs to PWSCC.

FPL Response:

Administrative Procedure AP-0190.76, "Verification of Steam Generator Tube Plug Installation," is currently in biennial review. This procedure may be converted to a maintenance procedure because of plans to broaden its scope. In any event, a Quality Control hold point will be added requiring a verification of mechanical plugs prior to use. The use of Westinghouse mechanical plugs from heats 3279, 3513, 3962, and 4523 will be prohibited. Additionally, administrative controls will be provided in this same procedure to ensure that Westinghouse mechanical plugs removed from steam generators, regardless of heat number, come under FPL control and are examined for PWSCC on a sample basis for each heat. The revision to AP-0190.76 or its replacement procedure is scheduled to be issued by August 31, 1989.

3. Remedial actions at plants where the steam generator tubes are partially-depth-expanded within the tubesheet as described above may be deferred on a one time basis to the next scheduled refueling outage if the outage that immediately follows receipt of this bulletin ends before October 1, 1989.

FPL Response: This item is not applicable to Turkey Point.

4. Remedial actions for "sentinel related" mechanical plugs described above may be deferred on a one time basis to the next refueling outage if the outage that immediately follows receipt of this bulletin ends before October 1, 1989.

FPL Response: This item is not applicable to Turkey Point.

References:

1. WCAP-12244, " Steam Generator Tube Plug Integrity Summary Report," April 1989.
- 2.. Westinghouse Letter; FPL-89-710 to K.R. Craig (FPL) from D.J. Richards (Westinghouse) dated May 25, 1989.
3. Westinghouse Letter; FPL-89-728 to G. L. Boissy (FPL) from D. J. Richards (Westinghouse) dated June 8, 1989.