

CATEGORY 2

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

✓ ACCESSION NBR: 9706260080 DOC. DATE: 97/06/18 NOTARIZED: NO DOCKET #
 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
 AUTH. NAME AUTHOR AFFILIATION
 HOVEY, R.J. Florida Power & Light. Co.
 RECIP. NAME RECIPIENT AFFILIATION
 Rules & Directives Review Branch (Post 920323)

SUBJECT: Comments opposing proposed communications, "CR Insertion Problems," dtd 970520.

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 TITLE: SECY/DSB Dist: Public Comment on Proposed Rule (PR)-Misc Notice; Reg G

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62 FR 26729
JUN 18 1997
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RULES & DIR. BRANCH
US NRC
(19)

Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop T-6D-69
Washington, D.C. 20555-0001

Re: Proposed Communication: Control Rod Insertion
Problems, 62 Fed. Reg. dated May 20, 1997

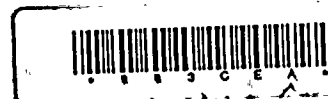
Florida Power & Light Company (FPL), the licensee for Turkey Point nuclear plants, hereby submits the following comments on the above-referenced Federal Register notice. FPL contends that the tests proposed by the NRC are unnecessary for fuel assemblies with 15x15 rod arrays used in reactors with core exit temperature below 615°F. FPL's conclusion is supported by the available data, the "no safety significance" of several control rods stuck in the dashpots of fuel assemblies and the unnecessary thermal cycling of plants which may reduce equipment reliability.

COMMENTS

In the proposed bulletin supplement, the NRC has asserted that "This problem is limited to fuel designs that incorporate small-diameter (approximately 0.5 inch) thimble tubes". FPL's Turkey Point plant utilizes 15X15 fuel designed by Westinghouse with nominal outside diameter thimble tubes of 0.533 inches. In thirty complete cycles of operation between the two Turkey Point units, no rod-insertion problems have been experienced. To our knowledge, there have been no problems or identified concerns at any plant with control rod insertability for any 15x15 fuel assemblies. All of the events identified in the proposed bulletin supplement are related to 17x17 VANTAGE 5H fuel assembly designs. The proposed bulletin should distinguish between the different fuel assembly design arrays (15x15 versus 17x17 assemblies).

Other factors such as operating temperatures are not adequately considered when specifying the burnup limits for testing in the proposed bulletin supplement. Detailed analyses and collection of empirical data by the fuel vendor, Westinghouse, identified RCS core exit temperature as being an important factor. Specifically, it was observed that accelerated growth of the fuel assemblies occurs above a core exit temperature of 615°F. This important factor should be accounted for in the NRC proposed bulletin supplement.

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Following issuance of NRC Bulletin 96-01, FPL performed a Unit 3 Middle-of-Cycle (MOC) 15 Hot Rod Drop Test, Beginning-of-Cycle (BOC) 16 Hot Rod Drop Test, Unit 4 End-of-Cycle (EOC) 15 Rod Drop from 2% power, EOC-15 Control Rod Drag Test and a BOC-16 Hot Rod Drop Test. None of these tests combined with thirty cycles of operating data for both Turkey Point units have indicated a problem with control rod insertion.

Both Westinghouse and the industry have provided a large volume of data consisting of hot rod drop tests, rod drag tests, hot cell examinations, rod recoil information and fuel design information to assist the industry and the NRC in determining the root cause of this event. The proposed bulletin supplement would require the industry to perform extensive and frequent testing of control rod insertion, without applying the knowledge gained from the data gathered in 1996.

The fundamental issue concerning incomplete rod insertion is whether the ability to safely shutdown the core for all anticipated or postulated events is adversely affected. Many plants, including Turkey Point, have substantial shutdown margin such that several control rods could fail to insert fully without an adverse impact on core shutdown. The Turkey Point cores are designed conservatively and would meet the required shutdown margin assuming several control rods get stuck at the dashpots of fuel assemblies. In addition, the calculational method is conservative and assumes a) the most reactive rod is completely stuck out of the core, b) the control rods are at the insertion limits allowed by the Technical Specifications, instead of all rods out and, c) conservative input values such as power defects. Additional mid-cycle testing for Turkey Point should not be required because there is no safety significance.

The proposed bulletin supplement expresses NRC's concern of control rod high drag above criteria without specifying the criteria nor its applicability. We believe that the NRC may be referring to the Westinghouse F-Specifications which were never intended to serve as indication that the control rod would not insert fully. In fact, the data show that control rods with drag data above the F-Specifications did insert properly.

The proposed tests approximately every 2500 MWD/MTU until the end of cycle will also cause undue risk of plant transients. The cycling of plant equipment every 11 weeks as a result of the required rod drop tests will have an adverse impact by increasing the number of thermal cycles and the associated potential for unanticipated transients. Subjecting the plant to increased thermal cycles may adversely affect equipment reliability and

substantially increase maintenance costs. Since the test will be performed at hot zero power, the operators will need to reduce power and transfer the main feedwater system from automatic to manual control. Following the test, the operators will need to increase power and switch feedwater back to automatic control. These operations decrease unit reliability and increase the probability of plant transients.

The actions proposed by the NRC, which include several middle-of-cycle shutdowns, and an end-of-cycle rod drop test and drag test can have significant financial impacts on operating utilities. These financial impacts for Turkey Point are estimated to be in excess of six million dollars per year (for both units), not including fuel cycle economic costs or additional maintenance costs.

Alternatively, changing the core design to ensure that no fuel assembly with burnup higher than 35,000 MWD/MTU is located under control rods will cause an adverse environmental impact in addition to costs. A minimum of 72 fresh fuel assemblies will be required each reload such that at least 44 out of 45 control rods would be inserted in fuel assemblies with less than 35,000 MWD/MTU. The incremental cost is estimated to be approximately four million dollars per cycle for both units. Increasing the number of fresh fuel assemblies each cycle will result in a 28% increase in the required spent fuel storage capacity. This would require earlier development and implementation of storage alternatives, and substantial increase in interim and final disposal costs, with the associated increase in high level radwaste.

All events, which involved 17x17 fuel assemblies, resulted in the control rod inserting for most of its length and only became stuck in the dashpot region. Therefore, the control rod essentially achieved its safety function. The NRC has recognized the importance of the rod drop time endpoint as the dashpot entry, as indicated by the Rod Drop Time Technical Specification. The portions that did not insert would have little impact on core reactivity. The additional testing that would be required by this proposed bulletin supplement represents a new staff position not described in the current Technical Specification surveillance requirements to determine control rod operability.

Westinghouse's Owners Group (WOG) Comments

FPL has reviewed comments generated by the WOG and fully endorses their position. In particular, we recommend that the NRC consider the actual data and the results of the root cause determination which identifies important parameters affecting accelerated thimble tube growth. FPL does not believe that the data support the proposed test requirements for fuel assemblies with 15x15 rod arrays with twelve foot active fuel height dimensions and core exit temperature below 615°F.

Backfit Analysis

The backfit analysis in the proposed bulletin supplement does not appear to conform with the requirements of the backfit rule. The proposed bulletin supplement states that "to the extent that the actions requested herein by addressees are considered backfits, the backfits are justified under the compliance exception of the backfit rule, that is, 10 CFR 50.109(a)(4)(I)."

Backfitting is defined by the regulation as the "modification of . . . the procedures required to . . . operate a facility . . . which may result from . . . the imposition of a regulatory staff position interpreting the Commission rules that is either new or different from a previously applicable staff position . . ." 10 CFR 50.109(a)(1).

The "requested action" in the draft bulletin supplement is for all licensees of Westinghouse plants to test control rod drops in fuel assemblies with certain burnups "upon first reaching the limits and approximately every 2,500 MWD/MTU until the end of cycle." For Turkey Point, this action would require a plant shutdown every 11 weeks to perform this testing, and would require modification of existing plant procedures in order to carry out this testing. The requirement for new procedures represents a new staff position that requires control rod insertability testing not previously required by any staff position and beyond that found in the current Technical Specifications for control rod operability testing.

Before a new NRC Staff position can be imposed on a licensee, the NRC must conduct a "systematic and documented analysis" for backfits that it wishes to impose, unless the proposed backfit falls under one of the exceptions to 10 CFR 50.109(a)(2). The "compliance" exception to the backfit rule, cited as justification not to conduct a backfit analysis, is applicable only where a modification is necessary to "bring a facility into compliance with a license or the rules or orders of the

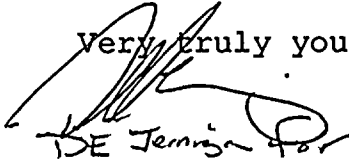
L-97-154

Page 5

Commission, or into conformance with written commitments by the licensee." FPL believes that the compliance exception may not apply in this case. Accordingly, FPL respectfully submits that the NRC perform a backfit analysis, pursuant to 10 CFR 50.109, prior to issuance of the final bulletin supplement.

We appreciate the opportunity to comment upon this proposed bulletin supplement.

Very truly yours,



DE Jernigan for
R. J. Hovey
Vice President
Turkey Point Plant

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 Per Betty Golden.

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US NRC

May 20, 1997
62 FR 27629

(19)

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U.S. Nuclear Regulatory Commission
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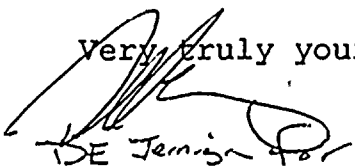
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