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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

AUTH. NAME PLUNKETT, T.F. AUTHOR AFFILIATION Florida Power & Light Co.

RECIP. NAME RECIPIENT AFFILIATION Document Control Branch (Document Control Desk)

SUBJECT: Forwards proprietary "Low Upper-Shelf Toughness Fracture Analysis of Reactor Vessels of Turkey Point Units 3 & 4 for Load A & B Conditions" for review & approval. Analysis withheld (ref 10CFR2.790).

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10 CFR 2.790

10 CFR 50, Appendix G

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
Low Upper-Shelf Toughness Fracture Analysis
of Reactor Vessels of Turkey Point Units 3
and 4 for Load Level A and B Conditions

The purpose of this letter is to request NRC review and approval of the enclosed analysis on low upper-shelf toughness fracture of the Turkey Point Units 3 and 4 reactor vessels for load level A and B conditions, in accordance with the requirements of 10 CFR 50 Appendix G, Section V.E.

By letter L-89-190 dated June 16, 1989, Florida Power and Light Company (FPL) proposed to incorporate the most recent developments in analytical techniques in the analysis of a low upper-shelf fracture toughness condition of the Turkey Point Units 3 and 4 reactor vessels. The enclosed analysis uses the elastic-plastic fracture mechanics methodology and acceptance criteria developed by the American Society of Mechanical Engineers (ASME) Section XI Working Group on Flaw Evaluation. Material properties for the Turkey Point vessels were characterized using pattern recognition analysis similar to those described in NUREG/CR 5356. An extensive J-resistance data base was assembled for this task.

The results of the analysis for the Turkey Point vessels are evaluated against the acceptance criteria for low upper-shelf fracture toughness analysis, developed by ASME Boiler and Pressure Vessel Code Section XI. The elastic-plastic fracture mechanics evaluation performed shows that the crack driving force applied is significantly lower than the material toughness at a crack extension of 0.1 inch, as specified by ASME Section XI. Also, the analysis results demonstrate that when the crack driving force is equal to the material toughness, crack growth is stable, as required by ASME Section XI. Additional loading margin exists since the Turkey Point vessels were fabricated using only circumferential welds in the beltline. The analysis clearly shows that the material has excellent toughness and, although the upper-shelf energy of the Turkey Point vessels may drop below 50 ft-lbs, there will be adequate margin of safety against fracture through at least 40 years of operation.

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an FPL Group company

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L-92-02
Page 2

The information provided in the enclosure is proprietary to, and provided by, the B&W Owners Group and accordingly, it is requested that the enclosed be withheld from public disclosure in accordance with paragraph (b)(4) of 10 CFR 2.790. The affidavit, included in the enclosure, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addressees.

Should there be any questions, please contact us.

Very truly yours,



T. F. Plunkett
Vice President
Turkey Point Nuclear

TFP/OIH

enclosure

cc: Stewart D. Ebnetter, Regional Administrator, Region II, USNRC
(w/o enclosure)
Senior Resident Inspector, USNRC, Turkey Point Plant (w/o
enclosure)
James H. Taylor, B & W Utility Owners Group, B & W Nuclear
Service Company (w/o enclosure)

ENCLOSURE
TO L-92-02

LOW UPPER-SHELF TOUGHNESS FRACTURE ANALYSIS
OF REACTOR VESSELS OF TURKEY POINT UNITS 3 AND 4
FOR LOAD LEVEL A & B CONDITIONS

PROPRIETARY

AFFIDAVIT OF JAMES H. TAYLOR

- A. My name is James H. Taylor. I am Manager of Licensing Services for B&W Nuclear Technologies, a participating member in the B&W Utility Owners Group (B&WOG) and as such I am authorized to execute this Affidavit.
- B. I am familiar with the criteria applied by the Nuclear Regulatory Commission (NRC) to determine whether certain information of the B&WOG is proprietary.
- C. In determining whether a B&WOG document is to be designated as proprietary information, an initial determination is made by the Unit Manager who is responsible for originating the document as to whether it falls within the criteria set forth in Paragraph D hereof. If the information falls within any one of these criteria, it is designated as proprietary by the originating Unit Manager. This initial determination is reviewed by the cognizant manager at the next higher organizational level. If the document is designated as proprietary, it is reviewed again by me to assure that the regulatory requirements of 10 CFR Section 2.790 are met.
- D. The following information is provided to demonstrate that the provisions of 10 CFR Section 2.790 of the Commission's regulations have been considered:
- (i) The information has been held in confidence by the B&WOG. Copies of the document are clearly identified as proprietary.
 - (ii) The following criteria are customarily applied by the B&WOG in a rational decision process to determine whether the information should be designated as proprietary. Information may be designated as proprietary if one or more of the following criteria are met.
 - a. Information reveals cost or price information, commercial strategies, production capabilities, or budget levels of the B&WOG or its suppliers.



(S)


- b. The information reveals data or material concerning the B&WOG research or development plans or programs of present or potential economic advantage to the B&WOG.
- c. The use of the information by a non-member would decrease his expenditures, in time or resources, in designing, producing, or marketing a similar product.
- d. The information consists of test data or other similar data concerning a process, method or component, the application of which results in an economic advantage to the B&WOG.
- e. The information reveals special aspects of a process, method, component or the like, the exclusive use of which results in an economic advantage to the B&WOG.
- f. The information contains ideas for which patent protection may be sought.

The document(s) listed on Exhibit "A", which is attached hereto and made a part hereof, has been evaluated in accordance with the B&WOG procedures with respect to classification and has been found to contain information which falls within one or more of the criteria enumerated above. Exhibit "B", which is attached hereto and made a part hereof, specifically identifies the criteria applicable to the document(s) listed in Exhibit "A".

- (iii) The document(s) listed in Exhibit "A", which has been made available to the United States Nuclear Regulatory Commission was made available in confidence with a request that the document(s) and the information contained therein be withheld from public disclosure.
- (iv) The information is not available in the open literature and to the best of our knowledge is not known by other organizations with interests and activities similar to those of the B&WOG.

E. I have personally reviewed the document(s) listed on Exhibit "A" and have found that it is considered proprietary by the B&WOG because it contains information which falls within one or more of the criteria enumerated in Paragraph D, and it is information which is customarily held in confidence and protected as proprietary information by the B&WOG. This report comprises information utilized by the B&WOG in its business which afford the B&WOG an opportunity to obtain an economic advantage over those who may wish to know or use the information contained in the document(s).

State of Virginia)
) SS. Lynchburg
City of Lynchburg)


James H. Taylor

Danita L. Zidel

My Commission Expires 4/5/92

EXHIBITS A & B

EXHIBIT A

1. BWOOG Materials Committee, Reactor Vessel Working Group, Proprietary Report BAW-2118P, "Low Upper Shelf Toughness Fracture Analysis of Reactor Vessels of Turkey Point Units 3 and 4 for Load Level A & B Conditions", November 1991.

EXHIBIT B

The above listed document contains information which is considered proprietary in accordance with Criteria b, c, d, and e of the attached affidavit.

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