

Dr. George E. Apostolakis, Chairman
Advisory Committee on Reactor Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

May 31, 2002

SUBJECT: REPORT ON THE SAFETY ASPECTS OF THE LICENSE RENEWAL
APPLICATION FOR THE TURKEY POINT NUCLEAR PLANT, UNITS 3 AND 4

Dear Dr. Apostolakis:

In your letter to Chairman Meserve dated April 19, 2002, you summarized the results of the review by the Advisory Committee on Reactor Safeguards (ACRS) of Florida Power and Light Company's (FPL's) license renewal application for the Turkey Point Nuclear Plant, Units 3 and 4, and the NRC staff's final safety evaluation report (SER) on the application. On the basis of its review, the Committee concluded that all open and confirmatory items had been resolved and that there was reasonable assurance that Turkey Point Units 3 and 4 could be operated safely in accordance with its current licensing basis for the period of extended operation without undue risk to the health and safety of the public. The Committee's timely review helped the staff in maintaining the review schedule. The staff has prepared a Commission Paper recommending issuance of the Turkey Point Units 3 and 4 renewed licenses.

With regard to Turkey Point's ability to withstand Category 5 hurricanes, you noted that although the contribution to the total risk from external events such as storm surges from Category 5 hurricanes is small, the staff should document its position on this issue. Safety concerns about storm surges at Turkey Point were initially raised by a member of the public during the Plant License Renewal Subcommittee meeting on March 13, 2002, in Florida City, Florida. This concern was raised again at the 491st ACRS meeting. The staff would like to provide the committee with additional information on the staff's review and documentation of the results.

Protection against storm surge is considered part of the current licensing basis for Turkey Point and is addressed in the Turkey Point updated final safety analysis report (UFSAR). In Appendix 5G, "External Flood Protection for Turkey Point," Section 5G.3, "Maximum Design Water Stage," the predicted maximum flood stage resulting from the maximum probable hurricane was projected to be 18.3 feet above the mean low water level. Based on this assessment, FPL took actions to ensure that external flood protection for hurricanes was provided to the 20-foot level in all directions by flood walls and stoplogs and to 22 feet and higher for door openings and equipment. The staff documented its position in its SER dated March 15, 1972. The staff noted that FPL resolved its concerns regarding the degree of flood protection required for the site and "... concluded that the flood protection that has been provided for the facility is acceptable." Licensees are required to take certain additional operational actions to cope with hurricane storm surges. These actions are generally covered by emergency plan implementing procedures.

Storm surge is among the external events that may be considered in risk assessments. FPL submitted its individual plant examination (IPE) report to respond to NRC Generic Letter (GL) 88-20, "Individual Plant Examination for Severe Accident Vulnerabilities," and to GL 88-20, Supplement 4, (IPE for external events [IPEEE]), in 1991, 1993 and 1994. FPL identified storm surge as the dominant hurricane hazard (but a small contributor to total risk). On November 4, 1998, the staff issued its staff evaluation (SE) report on the FPL IPEEE. In its SE, the staff found that storm surge dominated all other hurricane, tornado, and external-flooding hazards. The staff concluded that "FPL did not identify any potential vulnerabilities related to seismic, fire, or other external events." Nevertheless, FPL implemented a number of plant-specific improvements at Turkey Point, including walkdown procedures. Separately, and as part of its application for license renewal, FPL submitted an Environmental Report (ER) that addressed Severe Accident Mitigation Alternatives (SAMAs) to identify plant design and procedure changes that have the potential for improving severe accident safety performance. The ER built upon the FPL analyses presented as part of its IPE/IPEEE assessment. After completing its independent review, the staff documented its position in the site-specific supplemental environmental impact statement (Supplement 5 to NUREG-1437), which was issued on January 22, 2002. The staff agreed with FPL's conclusion that it "did not identify any fundamental weaknesses or vulnerabilities to severe accident risk with regard to the external events related to seismic, fire, high winds, floods, transportation and nearby facility accidents, and other external hazards" and the staff concluded "that the methods used and the implementation of those methods were sound." In addition, the staff agreed with the FPL conclusion that none of the candidate SAMAs were cost beneficial and declared that the "conclusion is consistent with the low residual level of risk indicated in the Turkey Point Units 3 and 4 PSA and the fact that Turkey Point has already implemented many of the plant improvements identified from the IPE and IPEEE process."

We believe that it is useful to discuss our experience after Hurricane Andrew hit Turkey Point in 1992. Subsequent to the passage of Hurricane Andrew at Turkey Point, the NRC and the industry reviewed the damage caused by the hurricane, the utility actions to prepare for and recover from it, and compiled the lessons that could benefit other facilities. In March 1993, the staff submitted to the Commission the NRC/Institute of Nuclear Power Operations report titled "Report on the Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992." In Appendix D, "Hurricanes and Hurricane Prediction," the highest storm surge of Hurricane Andrew is reported to have been 16.9 feet at a location 10 miles north of the Turkey Point site. The storm surge at Turkey Point was less than 7 feet. On July 9, 1993, the staff issued its summary of the actions taken by FPL as a result of the lessons learned at Turkey Point from Hurricane Andrew. Notably, the licensee's Emergency Plan Implementing Procedure (EPIP) 20106, "Natural Emergencies," was enhanced to incorporate lessons learned.

G. Apostolakis

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I hope this responds to your comment regarding storm surges at the Turkey Point site. The staff is available to further discuss this issue with the Committee.

Sincerely,

/RA by William F. Kane Acting For/

William D. Travers
Executive Director
for Operations

cc: Chairman Meserve
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan
Commissioner Merrifield

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