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 AUTH. NAME: UHRIG, R.E. AUTHOR AFFILIATION: Florida Power & Light Co.
 RECIP. NAME: EISENHUT, D.G. RECIPIENT AFFILIATION: Division of Operating Reactors

SUBJECT: Forwards supplemental response to 790913 ltr re NUREG-0578
 short-term requirements. Implementation schedules for many
 requirements improved.

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FLORIDA POWER & LIGHT COMPANY

November 21, 1979
L-79-329

Office of Nuclear Reactor Regulation
Attention: Mr. Darrell G. Eisenhut, Acting Director
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Eisenhut:

Re: Turkey Point Units 3 & 4
Docket Nos. 50-250 & 50-251
NUREG-0578 Short Term Requirements

Pursuant to Mr. Denton's letter of October 30, 1979 and subsequent telephone conversations with members of the NRC Staff, Florida Power & Light Company has re-evaluated its response to your letter dated September 13, 1979. Based on the foregoing and having additional time available in the interim to more clearly define schedules regarding the purchase and installation of hardware necessary to meet the requirements of NUREG-0578, FP&L has supplemented its response to your September 13th letter. Our supplementary response is attached to this letter, which is also intended to serve as a response to Mr. Denton's letter.

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/DKJ/cph

Attachments

cc: Mr. James P. O'Reilly, Region II
Harold F. Reis, Esquire

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ATTACHMENT 1

Re: Turkey Point Units 3 & 4

Docket Nos. 50-250 & 50-251

NUREG-0578 Short Term Requirements

As described below, the implementation schedules for many of the NUREG-0578 short term requirements have been improved in comparison with the schedules initially presented in our letter dated October 22, 1979 (L-79-293). Wherever possible, scheduled plans have been advanced. Please understand that the schedules herein represent our best estimate of the earliest possible implementation dates, given the constraints of manufacturers' ability to meet delivery schedules, limited manpower resources throughout the industry, and system load requirements relative to the operation of three nuclear units on the Florida Power & Light Company (FPL) grid.

Procurement and manpower constraints (as explained in greater detail in Attachment 2) prevent implementation of a few of the NUREG-0578 short-term requirements until after January 1, 1980 (January-February time frame). Since 1977, the FPL systemwide winter demand peaks have approached and sometimes exceeded the summer demand peaks. Given the certainty of a major winter peak, it is unavoidable that the short-term NUREG-0578 modification schedule be closely coordinated with the overall FPL load management projections for 1980. Consideration of procurement and manpower exclusive of load management would not accurately represent the situation that must be considered relative to installation of the NUREG items. For proper assessment FPL must consider all three items and their overall effect on FPL customers and the Florida



economy given the simultaneous shutdown of three nuclear plants (Turkey Point Units 3 & 4, and St. Lucie Unit 1) during January and February.

Turkey Point Unit 3 is scheduled to refuel during the period December 2, 1979 to February 1, 1980. FPL load management projections of total system capability and South Florida area capability show that outages of Turkey Point Unit 4 and/or St. Lucie Unit 1 in addition to Turkey Point Unit 3 would cause serious deficiencies in our ability to generate the expected winter loads.

For example, if St. Lucie Unit 1 is removed from service concurrent with Turkey Point Unit 3, there will be a projected systemwide deficiency of 489 Mw and a South Florida area deficiency of 90 Mw (the South Florida deficiency is significant from the standpoint of system stability). If both St. Lucie Unit 1 and Turkey Point Unit 4 are removed from service concurrent with Turkey Point Unit 3, there will be a projected systemwide deficiency of 1185 Mw and a South Florida area deficiency of 786 Mw. In accordance with standard operating practices mandated by the National Energy Reliability Council, a "single contingency allowance" has been factored into (1) the systemwide projections to allow for the loss of the next largest unit and (2) the South Florida projections to allow for the loss of the Andytown-Orange River 500 kV transmission line. It should be noted that these figures also assume peaking of all normally available gas turbines.

The shortfall in generation caused by concurrent NUREG-0578 shutdowns would lead to selective, rotating outages within the FPL service area. We believe that this can be justifiably avoided by maintaining the current planned-outage schedules for St. Lucie Unit 1 and Turkey Point Unit 4, since our improved



modification schedule shows that almost all NUREG-0578 short-term requirements requiring a plant shutdown can be met by January 1, 1980. The only items of this type for which we cannot fully meet the short-term date involve direct indication of valve position (2.1.3.a), and subcooling meters (2.1.3.b).

Furthermore, the interim operation period beyond the critical January-February period would be minimal because St. Lucie Unit 1 is scheduled for a refueling outage beginning March 30, 1980 and a Turkey Point Unit 4 outage is tentatively scheduled for late April, 1980. Concurrent or overlapping outages during the Spring are acceptable from a load management standpoint.

Finally, if any unscheduled outages of sufficient duration were to occur during the interim period, we would use that time to work on uncompleted items that required plant shutdown, given the availability on-site of necessary material.

ATTACHMENT 2

Re: Turkey Point Units 3 & 4

Docket Nos. 50-250 & 50-251

NUREG-0578 Short Term Requirements

2.1.3.a Direct Indication of Valve Position

The Turkey Point Units 3 and 4 primary system relief and safety valves will be provided with direct position or flow indication devices that meet the functional requirements of NUREG-0578, item 2.1.3.a. Action has been initiated to implement this requirement:

- (1) Purchase orders have been placed for the necessary material and equipment.
- (2) Completion of the engineering design by our Architect/Engineer (A/E) is planned for December 14, 1979.
- (3) Equipment delivery at the plant, based on the manufacturer's promise to deliver, is scheduled to be completed by December 28, 1979.

- (4) Complete implementation of this requirement is planned for Unit 3 during the refueling outage scheduled to begin about December 2, 1979.
- (5) Complete Unit 4 implementation of this requirement is scheduled for approximately April 1980, based on justification provided in Attachment 1.

2.1.3.b Instrumentation for Inadequate Core Cooling

Subcooling meters will be installed in the Turkey Point Units 3 and 4 Control Room. The meters will continuously display the margin to saturation in terms of either temperature or pressure through the use of a selector switch. Action has been initiated to implement this requirement:

- (1) A vendor has been selected and advised of our decision to purchase subcooling meters.
- (2) Some of the required material is available at the plant site.
- (3) Purchase orders have been placed for the remainder of the necessary material and equipment.
- (4) The engineering design by our A/E is scheduled for completion by December 28, 1979.

- (5) Equipment delivery at the plant is scheduled to be completed by January 1, 1980. This is the best available delivery date based on negotiation with the manufacturer of the subcooling meter.
- (6) Complete implementation of this requirement for Unit 3 is scheduled for February 22, 1980, based on a required installation time (to pull cable and connect equipment) of approximately 4 weeks. This date extends beyond the refueling outage as currently scheduled and represents the only short-term requirement requiring plant shutdown that could presently cause an implementation problem for Unit 3. We will make every effort to advance the schedule so that it falls within the refueling outage.
- (7) Complete Unit 4 implementation of this requirement is scheduled for approximately April 1980, based on justification provided in Attachment 1.

2.1.5.a Dedicated H₂ Control Penetrations

Turkey Point Units 3 and 4 have redundant purge connections which are independent of the large containment penetrations. However, we have not concluded our engineering review to determine if the design criteria specified in NUREG-0578, item 2.1.5.a are met. This review will be completed and FPL will provide a plan description which meets the intent of the NUREG-0578 requirements by January 1, 1980.

Completion of any required modification is planned by January 1, 1981.

2.1.6.a Systems Integrity for High Radioactivity

A program is being developed to reduce leakage from systems outside containment that could contain highly radioactive fluids during a serious transient or accident. The appropriate systems have been identified and procedures are being prepared for approval, which will implement the leak reduction program. The program for systems containing liquids will include visual inspection of systems under pressure, pressure decay techniques currently used for local leak rate testing, and measurement of makeup rate to a system while maintaining a constant system pressure. For systems containing gases, the short term program will include bubble testing, pressure decay techniques, and radioisotopic detection techniques.

Implementation of the program on Unit 4 is planned for January 1, 1980. Unit 3 will be in refueling shutdown during December, 1979, and January 1980; therefore, the program is planned for implementation in conjunction with other outage work, with planned completion prior to unit startup.

2.1.6.b Plant Shielding Review

The A/E is performing the required design review as follows:

- (1) The P&ID's and piping drawings for the systems expected to operate during post accident recovery have been marked-up.
- (2) The following areas are being reviewed for personnel access:
 - A. Main Control Room
 - B. Component Cooling Pump Room
 - C. Passageways in the Auxiliary Building
 - D. Pipe and Valve Room
 - E. Boric Acid Batching Room
 - F. Sample Room
 - G. Charging Pump Room
 - H. Area between Auxiliary Building and Refueling Water Storage Tank
- (3) The shielding review for systems normally required for post accident operation will be complete by January 1, 1980. The systems in this phase are:
 - A. Containment Sump Recirculation Line

B. Low Head Safety Injection

C. High Head Safety Injection

D. Containment Spray

E. Residual Heat Removal

F. Sampling System

(4) The systems not previously considered to operate after an accident will require a more extensive study and the review will not be complete until April, 1980. The reason for the longer schedule is partially the result of a lack of clarity in NUREG 0578 as to which systems are to be considered. First, a clear definition of systems or portions of systems required will be developed. This in-depth review may show that, due to corrective actions initiated in response to other NUREG 0578 items, some of the systems under current consideration may not require operation. Next, specific radiation source terms must be developed for modeling of these systems.

(5) After development of specific system source terms, radiation doses may then be calculated. The last step in the review is to develop a realistic approach to any shielding problems that

may arise. Many of these systems were never considered to carry highly contaminated fluids and may not lend themselves to shielding. Thus, there is a need for a realistic approach to this problem.

- (6) For the above technical reasons, combined with manpower resource limits, the shielding review for systems not previously considered to operate after an accident cannot be completed until April, 1980.
- (7) Any additional shielding that may be needed as a result of the shielding review will be installed on a schedule that cannot be developed until completion of the review. We do not have sufficient information at this time to make a firm schedular commitment, however, we intend to make every reasonable effort to meet the January 1, 1981 date.

2.1.7.a Automatic Initiation of Auxiliary Feed

- (1) As stated in our responses dated April 24, 1979 and June 18, 1979 to IE Bulletin 79-06A, the auxiliary feedwater system is automatically initiated, however, the feedwater regulator valves are modulated by operator action from the control room to maintain steam generator level. Normal practice and established procedures dictate that an operator (as a primary and essential function) monitor and maintain steam generator level(s) during transients or accidents. The operator

assigned to maintain steam generator level(s) does not have any other concurrent duties during an accident or transient until after the steam generator level(s) are stabilized.

- (2) In order to provide fully automatic flow initiation, the auxiliary feedwater control valves will be automatically opened to a predetermined position after a short time delay sufficient to enable the turbine driven auxiliary feed pump to attain full speed.
- (3) Design of the modification will proceed upon satisfactory completion of the analyses. A control grade design is scheduled for completion by January 11, 1980.
- (4) Given the availability of off-the-shelf control grade components, delivery at the plant site is planned for January 11, 1980.
- (5) Implementation of the control grade modification can be completed by February 15, 1980 for both Units 3 and 4 since plant shutdown is not required.
- (6) The automatic time delayed opening of the auxiliary feedwater system discharge valves, meeting safety grade requirements, will be implemented by January 1, 1981.

2.1.7.b Auxiliary Feed Flow Indication

- (1) Control grade indication will be provided by installing a back-up nitrogen supply system to augment the existing pneumatic instrument loops on the steam generators.
- (2) The control grade design modification is scheduled for completion by December 7, 1979.
- (3) Implementation of the control grade modification will be completed by January 1, 1980 for both Units 3 and 4 since plant shutdown is not required.
- (4) Implementation of the safety grade system is scheduled for completion by January 1, 1981.

2.1.8.a Post Accident Sampling

- (1) A generic design for automatic sampling and analysis, including the additional shielding, can be completed by our A/E by January 1, 1980. We anticipate the need for a major modification.
- (2) Since development of procedures and plant modifications logically follow the design review, they are scheduled to begin approximately January 1, 1980.

- (3) We will make every reasonable effort to meet the January 1, 1981 modification date.

2.1.8.b High Range Radiation Monitors

FPL is proceeding with the design and procurement of high range in-containment radiation monitoring instrumentation and effluent monitoring instrumentation, but we do not have sufficient information at this time to make a firm commitment regarding scheduled implementation of these modifications. Since Unit 3 is scheduled for a routine refueling outage during the Spring of 1981, we intend to make every reasonable effort to implement the Unit 3 modifications at that time. Unit 4 is tentatively scheduled for steam generator replacement beginning in the Fall of 1980 and extending into the Summer of 1981, which would accommodate the Unit 4 instrumentation modifications. However, steam generator replacement could be deferred until a later date, in which case a revised instrumentation modification schedule would have to be developed for Unit 4.

Since the January 1, 1980, procedural requirements related to the monitoring of noble gases, radioiodine, and particulate effluents was not contained in NUREG-0578, we are just beginning our effort to comply. Given the short time frame and our short-term manpower limits, we can only approximate an April 1, 1980, completion date. We will make every reasonable effort to advance that date as much as possible.

2.1.8.c Improved In-Plant Iodine Instrumentation

Based on the best available equipment procurement schedule, we can have a permanent installation by June of 1980. Associated training and procedures are being developed in parallel with procurement to the greatest practicable degree, however, they could not be finalized until approximately two months beyond the installation date (August, 1980).

If required during the interim period, we can draw air samples through a charcoal filter, purge the noble gases bypassing air over the charcoal, and analyzing for Iodine on a GeLi detector.

2.1.9 Analysis of Design & Off-Normal Transients & Accidents

(1) Transient and Accident Analysis:

No change from initial response.

(2) Containment Pressure Monitor:

(3) Containment Water Level Monitor:

(4) Containment Hydrogen Monitor:

Items 2, 3, and 4 are being engineered by our A/E and our preliminary planning (assuming no equipment procurement problems) is for

installation by approximately April-May, 1981 for Unit 3 and during the 1980-1981 steam generator replacement for Unit 4. If the steam generator replacement is deferred, a revised schedule will be developed.

(5) RCS Venting:

The engineering design by our A/E is scheduled for completion by December 21, 1979. Since the details involving analysis, procurement, and installation remain to be resolved, we are unable to make a firm schedular commitment at this time. Since Unit 3 is scheduled for a routine refueling outage during the Spring of 1981, we intend to make every reasonable effort to implement the Unit 3 modifications at that time. Unit 4 is tentatively scheduled for steam generator replacement beginning in the Fall of 1980 and extending into the Summer of 1981, which would accommodate the Unit 4 instrumentation modifications. However, steam generator replacement could be deferred until a later date, in which case a revised instrumentation modification schedule would have to be developed for Unit 4.

2.2.1.b Shift Technical Advisor

The primary function of the Shift Technical Advisor (STA) will be one of assessment and diagnosis during accidents or abnormal transients. He may be assigned other collateral duties that will not

interfere with his primary function. Training of technical advisors is scheduled to be completed by January 1, 1981, contingent on the availability of simulator training time.

FPL believes that the STA responsibility can be appropriately discharged over the short term by utilizing an "on call" system as described in our original response. Over the long term, FPL believes that upgrading of the shift supervisor responsibility to include the STA function is the best alternative.

Nevertheless FPL is endeavoring to establish an on-shift technical advisor program by January 1, 1980. Establishing the on-shift technical advisor will require additional staff at the plant. In this regard we are actively recruiting candidates from outside the company and screening in-house personnel. If all STA positions are not filled by January 1, 1980, personnel from various corporate departments will be assigned to this position during the interim until all STA positions are formally filled.

Operational experience evaluation and assessment may be performed by the technical advisor or other functional organizations either on-site or at FPL's General Office. At such time that the man-machine interface is improved as a result of such activities as improved control room design and/or operator qualification, FPL may elect to designate a qualified member of the operating shift to perform the accident/transient function.

2.2.2.b Onsite Technical Support Center

- (1) The Instrument & Control Building will be used to house the Technical Support Center (TSC) by January 1, 1980.
- (2) Design details to upgrade the TSC to meet all requirements will be provided by our A/E as soon as possible in an effort to meet the January 1, 1981 implementation date.

