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RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Operating Reactors Branch 1

SUBJECT: Responds to NRC 800320 ltr re implementation of short-term Lessons Learned requirements. Supplemental info re direct indication of valve position, subcooling meter, containment isolation & plant shielding review encl.

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O. BOX 529100, MIAMI, FL 33152

FLORIDA POWER & LIGHT COMPANY

March 28, 1980
L-80-109

Office of Nuclear Reactor Regulation
Attention: Mr. A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Schwencer:

Re: Turkey Point Units 3 and 4
Docket Nos. 50-250 and 50-251
Short Term Lessons Learned

This letter provides information concerning lessons learned implementation at Turkey Point, as requested by the NRC Staff on March 20, 1980. The attached supplements our letters of January 31, 1980 (L-80-39), March 10, 1980 (L-80-79), and March 19, 1980 (L-80-88).

Very truly yours,

Robert E. Uhrig
Vice President
Advanced Systems & Technology

REU/RAK/ah

Attachment

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

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1/1

2.1.2.a Direct Indication Of Valve Position

(1) The PORV's position indicators at Turkey Point Units 3 & 4 are powered from vital busses.

(2) PORV position indication (including "back up" method) is covered in plant procedures (ONOP 0208.3 and ONOP 1208.1).

2.1.3.b Subcooling Meter

(1) Modifications will be made to plant computer to provide for a display in the control room of core exit temperature using eight core thermocouples (2 per core quadrant) as inputs. We plan to complete this modification by April 4, 1980.

(2) Modifications will be made to the plant computer to provide for a display in the control room of core temperature margin to saturation using eight core thermocouples (2 per core quadrant) and two indications of reactor system pressure as inputs. It is intended to provide continuous display of temperature margin. We plan to complete the modifications by 5/9/80.

(3) We understand that these modifications are acceptable for the resolution (long-term) of lessons learned item 2.1.3.b. However, FPL is evaluating other alternatives which the NRC has also determined to be acceptable for meeting this requirement (2.1.3.b), and may elect in the future to implement one of these alternatives. Item 2 when implemented supercedes the commitment made in Item 1 above.

(4) The subcooling meter and the plant computer are both powered from vital busses.

(5) A technical data sheet for the plant computer will be submitted by April 4, 1980.

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[illegible]

[illegible]

2.1.4 Containment Isolation

(1) Changes will be made to plant procedures to require that manual isolation valves for containment penetrations P5 and P25 be shut following determination of a valid safety injection. These changes will be completed by April 4, 1980. These changes are an interim measure until previously committed hardware modifications are implemented.

2.1.6.b Plant Shielding Review

(1) The requested diagram showing dose rates in the Aux. Bldg. has been submitted in a previous submittal. An additional copy was mailed per our agreement in our conference call of 3-25-80.

(2) Radiation exposure to individuals using the interim sampling system has been evaluated by our Engineering Dept. The resulting conclusion is that the sample can be taken (using the interim sampling system) without incurring a radiation exposure to any individual in excess of 3 REM whole body, and 18 3/4 REM to the extremeties. This conclusion is based upon the following information:

(a) Access to/from the sampling station is via an area whose dose rate is 0-.015 R/hr (i.e. an A-I area on the provided diagram).

(b) The dose rate in the proximity of the sample station is a maximum of 50 R/hr.

(c) All piping runs outside of shield walls are being shielded with lead bricks (shielding to be installed by 4/14/80).

(d) The assumed sample dose rate was 1000 R on contact (i.e. TMI type sample).

(e) The grab sample can be taken in less than 1 minute.

2.1.6.b continued

(1) Environmental qualification of safety grade equipment exposed to high radiation.

Our prior submittal (letter #L-80-79 dated 3/10/80) addressing this issue contained typographical errors. The threshold for radiation damage of elastomer or plastic insulation materials was incorrectly given as 106 Rads. The correct value is 10^6 Rads. Similarly the post LOCA accident radiation dose for in containment equipment qualification is 10^8 Rads, and the maximum dose in high radiation areas of the Aux. Bldg. is approximately 10^6 Rads. Our assessment that these materials can be qualified to meet post-accident TMI radiation levels is based upon data taken from Vendor's Standard Qualification Reports and Technical Manuals which state that representative materials such as HYCAR-1072, synthetic rubber, natural rubber, nitrile, and M-EPT, can all withstand 10^6 R.

2.1.8.a The following constitutes our description of the Interim Post Accident Sampling System:

In order to meet the short term requirements of NUREG 0578 for sampling the reactor coolant system following a TMI-2 or other similar accident, Turkey Point 3 & 4 has installed dedicated sample lines to route a reactor coolant sample to an out of the way low background area. This was necessitated in order to minimize personnel radiation exposure which could be received from components within the sample room. These interim sample lines will be shielded to further reduce personnel radiation exposure (completion scheduled for 4/14/80).

The new sample lines are not a permanently installed part of the normal sample system, but are quickly activated by quick disconnect couplings to our existing sampling system. Procedures detailing the use of the post accident sampling system are provided in Turkey Point 3 & 4 Procedure NC-6. Instructions are provided in NC-6 for system alignment, system activation, and collection of samples. Mechanical manipulators and a cart mounted shield are employed to collect the sample and transport it to the laboratory. The manipulators, transfer shield, sample apparatus and dedicated reagents for analyzing the coolant for pH, boron and activity are on hand and are stored in designated locations. Instructions for handling and analyzing high activity coolant (e.g. sample dilution) are specified in specific plant analytical procedures.

2.1.8.a continued

In order to meet the interim requirements of NUREG 0578 for sampling the containment for hydrogen, a special removable gas sampling vessel has been fabricated to be used in our existing containment sample system. The special vessel containing a sample would be transported to the laboratory where a portion of the sample would be transferred to an existing gas analysis system and analyzed for hydrogen in accordance with Turkey Point Procedure NC-53. The special gas sampling vessel is maintained in a designated location.

2.1.8.b In response to the NRC inquiry concerning the type of NMC monitor used by Turkey 3 & 4, the NMC's referred to in our response of 3/10/80 are Model #221-F.

2.1.8.b Pertaining to the inquiry about the Turkey Point ventilation system:

The Auxiliary Building ventilation, Rad Waste Building, Unit-4 Spent Fuel Pit, Laundry facility, 3 & 4 Containments and Gas Decay Tank release line all exit via the plant vent stack. The Spent Fuel Pit for Unit #3 exhausts through its own stack.

The condenser plant air ejectors, atmospheric steam dumps, blowdown flash tanks, and steam safety valves all exhaust directly to ambient above the turbine deck.

As discussed in our letter L-80-79 (3-10-80), FPL intended to determine noble gas activity released from steam safety valves, atmospheric steam dumps, etc. by collecting condensed steam samples from our main steam sample lines. This we feel, would provide the most accurate assessment of noble gas, iodine & particulate activity being released. However, the NRC comments transmitted to us via telephone 3/20/80 now indicate that the grab sampling technique is not acceptable for noble gas. Turkey Point 3 & 4 will therefore institute (by 4/11/80) a procedure which will enable real time measurements to estimate the

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2.1.8.b continued

amount of noble gasses released via steam pathways in accordance with NUREG 0578 requirements, by monitoring the radiation dose at a point on the condensed steam sample lines; and employing conversion factors for estimating noble gas activity in conjunction with a volume release rate to obtain total noble gas activity release rates. Further particulate and iodine concentrations will be determined by grab samples from the existing main steam sample lines.

2.1.8.c Improved In-Plant Iodine Instrumentation Under Accident Conditions

In order to meet the requirements of NUREG 0578 to accurately determine airborne concentrations of radioactive iodine in areas which may be occupied during an accident and to avoid unnecessary or prolonged use of respiratory equipment, Turkey Point 3 & 4 has implemented the following:

Silver Zeolite sample cartridges are stored outside of the radiation controlled area (RCA). To preclude interferences by noble gas absorption, only Silver Zeolite cartridges will initially be used to sample critically manned areas (e.g. Control Room, Technical Support Center, other areas which require personnel to be present). During subsequent sampling, if charcoal filters are used for sample collection, experience has shown that noble gasses absorbed by the sample media can be effectively removed by purging with clean air or nitrogen for 15-30 minutes.

One minute air samples will be collected using portable high volume air samplers in accordance with the techniques provided in Turkey Point Operating Procedure 11550.22. Portable air samplers are located such that time required to obtain results is minimized for critically manned areas (e.g. Control Room, Technical Support Center).

Samples collected will be transported via the quickest possible means to the Whole Body Counting Trailer located in a low background area outside the RCA. Samples are to be counted for 5 minutes on the whole body sodium iodide detector and airborne radioactive iodine concentrations accurately determined in accordance with Turkey Point Operating Procedure 11550.53.