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SUBJECT: Discusses upgrading of area radiation monitoring sys,per Reg Guide 1.97.

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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
Area Radiation Monitoring System

Florida Power and Light Company (FPL) submitted a plan to meet Regulatory Guide 1.97 by letters L-84-20, dated January 16, 1984 and L-85-176A, dated May 10, 1985. As part of the plan to comply with the guidelines contained in Regulatory Guide 1.97, FPL utilized 8 channels of the existing 24 channel Area Radiation Monitoring System (ARMS) to provide the radiation monitoring capability specified in Section E2. Letters L-86-329, dated August 15, 1986 and L-86-509, dated December 31, 1986, provided a schedule to install a new, separate, non-qualified ARMS by December 1990 which would comply with the guidelines specified in Regulatory Guide 1.97 for display locations and instrument ranges. This commitment was based on the existing system's low availability and lack of spare parts due to out-dated electronics.

At Turkey Point, FPL has analyzed and resolved a similar problem that was occurring with the plant's Process Radiation Monitoring System (PRMS). The PRMS manufacturer and the plant's Instrument and Control Department formed a team to resolve the problem. New electronic modules were designed and installed both locally and in the Unit 3 and 4 control room. System availability has improved and the problem of lack of spare parts has been eliminated. The same team that evaluated the PRMS problem has addressed the low availability of the ARMS. Currently, redesign of the electronic module racks has been completed and will soon be installed for testing. Several system enhancements have been incorporated, including an isolation amplifier to provide an interface for all 24 ARMS channels with the plant computer system. This interface, when connected with the upgraded Emergency Response Data and Display System (ERDADS) will provide direct display indication in the Technical Support Center and the Emergency Offsite Facility in accordance with Regulatory Guide 1.97.

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Additionally, the electronic modules located in the control room and in the field will be upgraded to maximize availability and improve maintainability. The Geiger Mueller tube detector to be utilized in this remaining upgrade will have the capability to monitor 5 decades of radiation level. The guidelines in Regulatory Guide 1.97 specify a range of 10^{-1} to 10^{4} R/Hr. The radiation range that FPL is proposing to utilize for plant operation is 10^{-3} to 10^{2} R/Hr. The basis for this range is that the ARMS provides continuous monitoring of the plant's environment which has a normal background of 10^{-4} to 10^{-3} R/Hr. In addition, NUREG 0645 requires an Alert Declaration setpoint of 1000 times the normal background level. This setpoint would be in the 1 R/Hr range. The proposed maximum range of 100 R/Hr would provide the emergency response facilities indication of radiation levels which would allow recovery actions to be planned. A 100 R/Hr radiation field would allow only a 5 minute stay time for emergency operations or activities. Any higher dose rate would allow insufficient stay time for workers to perform any activity. These work crews would also carry portable instruments which could measure much higher radiation fields (TELETECTORS have a maximum range of 1000 R/Hr) to assure personnel are aware of the accident environment.

Therefore, based on the above evaluation, FPL considers that this scope change meets the intent of Regulatory Guide 1.97 for display locations and has an instrument range of 10^{-3} to 10^{2} R/Hr. This instrument range will accommodate the normal operating range and still provide the emergency response capabilities as required by the Turkey Point Emergency Plan. The upgrading of the electronics and detectors rather than a complete system replacement will accomplish the intended functionality/availability goals. The resource allocations for this revised work scope will be entered into an upcoming run of the Turkey Point Integrated Schedule and shall be consistent with the previously agreed operational commitment of December 31, 1990.

Should there be any questions on this request, please contact us.

Very truly yours,

W. F. Conway
Senior Vice President - Nuclear

WFC/RG/gp

cc: Dr. J. Nelson Grace, Regional Administrator,
Region II, USNRC
Senior Resident Inspector, USNRC, Turkey Point Plant

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