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SUBJECT: Forwards info to address potential Insp Followup Item
 91-08-07 re location of containment high-range area
 radiation monitors. Monitor locations effective in satisfying
 guidelines in NUREG-0578, NUREG-0737 & 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 Unit 3 and Unit 4
Docket Nos. 50-250 and 50-251
Written Response To IFI 91-08-07
Date of Exit: March 1, 1991

The attached information from FPL is being provided to address a potential Inspection Followup Item (IFI). On March 1, 1991, the IFI was presented during the exit for Inspection 91-08. A telecon discussion regarding the IFI occurred on March 22, 1991 between FPL and the NRC. Representing the NRC were Mr. G. B. Kuzo and Mr. W. B. Gloersen. If there are any questions on this matter, please do not hesitate to contact us.

Very truly yours,

T. F. Plunkett by L. W. Pearce

T. F. Plunkett
Vice President
Turkey Point Nuclear

TFP/DRP/MKA/ma

Attachment

cc: George B. Kuzo, Inspector, USNRC, Region II
Senior Resident Inspector, USNRC, Turkey Point Plant

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TECHNICAL ASSESSMENT
LOCATIONS OF CHRRMS DETECTORS

ISSUE:

An NRC inspector has requested additional information on the location of CHRRMS monitors RAD-3-6311A and RAD-4-6311B near the personnel hatch based on the apparent interference or shielding effects of intervening structures.

BACKGROUND:

1. The CHRRMS detectors were installed by PC/Ms 80-25/26. Criteria provided by NUREG-0578 and R.G. 1.97 were included in the development of PC/Ms 80-25/26. NUREG-0578 contained two requirements:

- (a) an upper range limit of 10^6 Rad/Hr, and
- (b) a minimum of 2 monitors designed and qualified to function in an accident environment.

R.G. 1.97, Revision 2 recommended a minimum of 2 monitors at widely spaced locations inside containment.

2. The functions of the CHRRMS detectors are provided in R.G. 1.97 as:

- (a) Detection of significant releases
- (b) Release Assessment
- (c) Long-term surveillance
- (d) Emergency plan actuation

These functions are aimed at providing the operators with an order-of-magnitude measurement of containment radiation after an accident.

3. NUREG-0737 was issued by the NRC to provide clarification and guidance on meeting the Post-TMI requirements. With regard to CHRRMS detector locations, NUREG-0737 states that the monitors be located in containment to view a large segment of the containment atmosphere which will more accurately reflect and monitor accident conditions.

EVALUATION:

Two independent CHRRMS monitors are installed in each containment. One is located on a steam generator cubicle (above elev. 58'). It provides a clear view of the containment atmosphere activity and radiation from the Emergency Containment Filters (ECFs). The ECFs are the largest magnitude source of post accident radiation. The other monitor is located near the personnel hatch (approx. elev. 25'). It provides an effective "line-of-sight" (i.e., no inadvertent shielding) view of the containment sump activity; a major source of post-accident radiation. Under post-accident conditions, either monitor location is considered to provide an effective view of the containment volume to satisfy the order-of-magnitude measurement necessary to base operator decisions.

This design provides independently-powered channels which effectively monitor the sources of Containment High-Range Area Radiation. This design provides diverse measurements and fully satisfies the basic functions of R.G. 1.97. Having two diverse locations will provide a more realistic assessment of post-accident conditions throughout the containment. For the monitor in question, its location near the personnel hatch allows more accurate planning of accident recovery actions.

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CONCLUSION:

The locations of the CHRRMS monitors are effective in satisfying the functional guidelines of R.G. 1.97 and NUREGs 0578 and 0737. Our evaluation of the shielding effects of adjacent materials does not affect this assessment, particularly considering the line-of-sight views of post-accident radiation sources as described above. The original design, recent walkdowns, and qualitative evaluations are adequate to ensure the order-of-magnitude monitoring capability up to the range prescribed in the regulations.