

DEC 22 1981

Docket No. 50-261

Mr. J. A. Jones
Senior Vice President
Carolina Power and Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

Dear Mr. Jones:

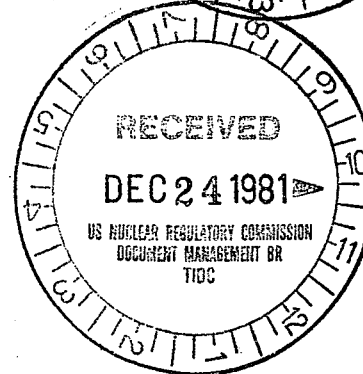
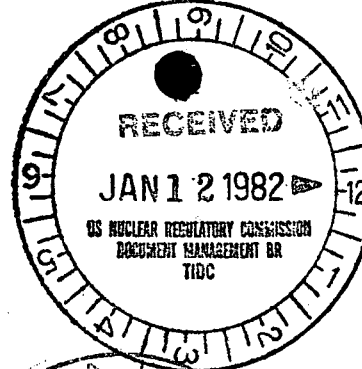
By letter from D. G. Eisenhower dated October 31, 1980 we transmitted to you a copy of NUREG-0737 "Clarification of TMI Action Plan Requirements." Item II.F.1.1 in this document provides criteria for monitoring concentrations of noble gas fission products in plant gaseous effluents during and following an accident. The requirements of this item are to be implemented by January 1, 1982.

In your response dated March 3, 1981, you provided design details for a system to monitor noble gas effluents that would be installed by January 1, 1982. This system deviated from the requirements of NUREG-0737 in two ways. You proposed to calibrate the effluent monitor to the average energy of the TID-14844 source term instead of to a ^{133}Xe equivalent. You also proposed to use radiation detectors mounted externally to the stack.

Our preliminary evaluation of your system was provided to your staff on August 12, 1981. We found the use of an alternate calibration source to be acceptable as long as energies between 60 KeV and 3 MeV can be measured. We found, however, that the design of an externally mounted detector did not meet two requirements of NUREG-0737. This deviation has been discussed several times between our staffs and in my letter to you dated September 30, 1981 but has not been resolved.

We have submitted your proposal to a staff contractor for additional review, and I am enclosing the contractor's evaluation. As you will see, this evaluation concludes that your proposed design is not sufficient to meet the requirements of Table II.F.1-1 of NUREG-0737 for the upper ranges of noble gas effluents, e.g., 10^2 to 10^5 uCi/cc. Similarly, a radiation detector mounted internally to the duct, but not shielded from ambient radiation, is not sufficient to meet the requirements for concentrations less than 10^2 uCi/cc, unless the detector is responsive only to beta radiation, e.g. beta scintillation detector.

The Technical Evaluation considers the merits of offline detectors. The deviation for the high range detector can also be resolved by a procedure through which the thickness of the duct or pipe may be taken into account when measuring low-energy gamma radiation; however, such a procedure must satisfactorily consider the shifting energy spectrum resulting from radioactive decay following reactor shutdown.



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Mr. J.A.A. Jones

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We desire to resolve this issue expeditiously so as to minimize the slippage of the implementation date. You are requested to provide additional technical justification of your design or a commitment to meet the requirements of Table II.F.1-1 of NUREG-0737 within 15 days of receipt of this letter. A commitment to meet the NUREG-0737 requirements should be accompanied by an implementation schedule for our approval.

Sincerely,

Original signed by:

S. A. Varga

Steven A. Varga, Chief
Operating Reactors Branch #1
Division of Licensing

Enclosure:
Technical Evaluation

cc w/enclosure:
See next page

OFFICE	ORB#1:DA	ORB#3:DL	ORB#1:DL				
SURNAME	WROSS:OS	WROSS:OS	S.Varga				
DATE	12/21/81	12/22/81	12/22/81				

Mr. J. A. Jones
Carolina Power and Light Company

cc: G. F. Trowbridge, Esquire
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