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Docket Nos. 50-325/
324

Mr. E. E. Utley
Executive Vice President
Carolina Power & Light Company
P. O. Box 1551
Raleigh, North Carolina 27602

JAN 27 1983

Dear Mr. Utley:

SUBJECT: PLANT SHIELDING MODIFICATIONS, NUREG-0737 ITEM II.B.2.2

Re: Brunswick Steam Electric Plant, Units 1 and 2

The subject issue was divided into three parts: design review, plant modifications (corrective actions), and equipment qualification. By letter dated April 1, 1980, we closed out the first part. Our review of the third part has been included under our Multi-plant Action B-60, "Environmental Qualification of Electrical Equipment for Nuclear Power Plants" and is still in progress.

We have completed our review of the only remaining part, II.B.2.2, corrective actions taken for access to vital areas. Our review was based on your letter dated December 31, 1979.

Based on our review, we conclude that the recommendations of NUREG-0737, Item II.B.2.2 have been met, as stated in the enclosed Safety Evaluation.

Sincerely,

Original signed by

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

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SURNAME	SNorris	SMacKay:pob	MC DVassallo				
DATE	1/26/83	1/27/83	1/27/83				

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Mr. E. E. Utley
Carolina Power & Light Company

cc:

Richard E. Jones, Esquire
Carolina Power & Light Company
336 Fayetteville Street
Raleigh, North Carolina 27602

George F. Trowbridge, Esquire
Shaw, Pittman, Potts & Trowbridge
1800 M Street, N. W.
Washington, D. C. 20036

Mr. Charles R. Dietz
Plant Manager
P. O. Box 458
Southport, North Carolina 28461

Mr. Franky Thomas, Chairman
Board of Commissioners
P. O. Box 249
Bolivia, North Carolina 28422

Mrs. Chrys Baggett
State Clearinghouse
Budget & Management
116 West Jones Street
Raleigh, North Carolina 27603

U. S. Environmental Protection Agency
Region IV Office
Regional Radiation Representative
345 Courtland Street, N. W.
Atlanta, Georgia 30308

Resident Inspector
U. S. Nuclear Regulatory Commission
P. O. Box 1057
Southport, North Carolina 28461

James P. O'Reilly
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION

NUREG-0737, ITEM II.B.2.2-SHIELDING MODIFICATIONS

FOR VITAL AREA ACCESS

BRUNSWICK PLANT UNITS 1 AND 2

CAROLINA POWER AND LIGHT COMPANY

DOCKET NOS. 50-325 AND 50-324

Introduction

Following the accident at TMI-2, the NRC staff developed Action Plan NUREG-0660, and "Clarification of TMI Action Plan Requirements", NUREG-0737, to provide for improved safety at nuclear power plants. NUREG-0737, Item II.B.2.2 directed all licensees to perform a design review of plant shielding and to provide for adequate post accident access to vital areas by design changes, increased temporary or permanent shielding, or post accident procedural controls.

The plant shielding design review for the Brunswick Units 1 and 2 was described by Carolina Power and Light Company (CP&L) in its letter to the NRC dated December 31, 1979. The following evaluation contains the results of the post implementation review of the shielding study for NUREG-0737, Item II.B.2.2, entitled, "Plant Shielding Modifications for Vital Area Access".

Evaluation

In response to NUREG-0737, Item II.B.2.2, "Plant Shielding Modifications for Vital Area Access", a design review of the Brunswick Unit 1 plant shielding was performed. The licensee stated that the shielding review was applicable to both units. Based on similarities between Units 1 and 2 regarding equipment location and system design, we find this acceptable. In accordance with the requirements, radiation source terms were specified, systems assumed to contain high levels of radioactivity as a result of a postulated accident were determined, vital areas requiring access were identified and dose rates in various plant areas and vital areas were calculated.

The licensee's response to NUREG-0737, Item II.B.2.2 was reviewed during NRC Region II inspection 50-324/82-46 and 50-325/82-46. The assumptions and methodology employed by the licensee in the shielding design review were found to be consistent with the requirements. Source terms were based on source term requirements contained in NUREG-0737. The systems identified as potentially containing high concentrations of radioactivity following an accident were found to be consistent with system functions.

The shielding review identified no vital areas outside of the reactor building which required additional shielding to maintain worker exposures and area dose rates less than the limits specified in General Design Criterion 19 and NUREG-0737. Vital areas outside the reactor building identified in the review as capable of providing continuous access during an accident included the main control room and radwaste control room. The design review further concluded that no entry into the reactor building would be required in order to operate or monitor systems needed to mitigate the consequences of postulated accidents. Therefore, the licensee determined that no shielding or equipment modifications were required to provide vital area access. The inspector noted that CP&L had not completed installation of their Post Accident Sampling System (PASS) which would be located outside of the reactor building. The current sampling areas are near the Standby Gas Treatment System filter trains inside the reactor building which may affect post accident sampling capability after a few hours of radioactivity buildup on the filters. Evaluation of shielding requirements for post accident sampling including shielding requirements for the radioanalytical and chemistry laboratories will be evaluated in conjunction with NUREG-0737, Item II.B.3, "Post Accident Sampling".

Three emergency operating procedures were reviewed in order to verify that entry into the reactor building would not be required to mitigate the consequences of an accident. The procedures reviewed were for a fuel handling accident, loss of control rod shutdown capability, and a loss of coolant accident. It was determined that ECCS systems could be controlled and monitored from the main control room.

Conclusion

Based on the NRC review of the Brunswick shield design review and inspection of emergency operating procedures, we conclude that the requirements of NUREG-0737, Item II.B.2.2 have been met and are acceptable.

Principal Contributor: J. Wray (RII)

Dated: JAN 27 1983