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

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APRIL 7 1980

Docket Nos. 50-325
and 50-324

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

Dear Mr. Jones:

RE: MODIFICATIONS TO BOILING WATER REACTOR CONTROL ROD DRIVE SYSTEMS

Enclosed you will find a copy of our January 28, 1980 letter to General Electric which discusses the NRC staff's conclusions regarding proposed control rod drive (CRD) system modifications related to the elimination of cracking in the CRD return line nozzle. You will also find a copy of our February 11, 1980 letter to GE regarding additional analyses of boil-off rates and CRD system makeup capability. This letter also responds to a GE-proposed draft procedure for optimizing CRD pump flow to the reactor vessel.

We have requested that no modifications be performed on operating reactors until complete guidance has been issued in NUREG-0619. We understand, however, that prior to our request, modifications were performed at your facility under 10 CFR 50.59. NUREG-0619 will provide requirements for your facility. We anticipate issuing NUREG-0619 in its "For Comment" form in April 1980. If we can be of assistance, please contact your Project Manager.

Sincerely,

T.A. Ippolito

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Enclosures:
As stated

cc w enclosures:
See next page

cc:

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

January 28, 1980

Generic Technical Activity A-10

Mr. Richard Gridley, Manager
Fuel and Services Licensing
General Electric Company
175 Curtner Avenue
San Jose, California 95215

Dear Mr. Gridley:

Since the initial discovery of cracking in boiling water reactor (BWR) control rod drive return line (CRDRL) nozzles in early 1977, General Electric (GE) has proposed a number of solutions to the problem in the course of which several documents were submitted for NRC staff review. These documents were as follows:

1. Letter of March 14, 1979, G. G. Sherwood (GE) to Y. Stello and R. Mattson (NRC) regarding calculation of CRD system return flow capacity;

2. Letter of April 9, 1979, G. G. Sherwood (GE) to Y. Stello and R. Mattson (NRC) forwarding results of CRD system solenoid valve endurance testing;

3. Letter of May 1, 1979, G. G. Sherwood (GE) to Y. Stello and R. Mattson (NRC) forwarding results of CRD system solenoid valve performance testing; and

4. Letter of November 2, 1979, G. G. Sherwood (GE) to R. P. Snaider (NRC) forwarding additional information as requested regarding CRD hydraulic system performance, especially with regard to corrosion products emanating from carbon steel piping.

All concerned the GE rationale for the latest proposed system modification to prevent nozzle cracking; namely, total removal of the CRDRL and cutting and capping of the CRDRL nozzle. Previous submittals had presented the bases for the other modification proposals discussed herein.

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

February 11, 1980

Generic Task No. A-10

Mr. Richard Gridley, Manager
Fuel & Services Licensing
General Electric Company
175 Curtner Avenue
San Jose, California 95125

Dear Mr. Gridley:

By letter dated November 27, 1979, you forwarded results of analyses of boil-off rates and Control Rod Drive (CRD) System Pump makeup capability for plants not previously addressed in earlier related submittals. The letter also included a draft procedure for optimizing CRD pump flow to the reactor vessel.

The November 27, 1979 letter was not included in the NRC's Unresolved Safety Issue A-10 review and the analyzed classes of plants will not be included in NUREG-0619, which resolves A-10 and is tentatively scheduled for issuance in "For Comment" form by February 29, 1980. However, we see no reason why licensees and applicants cannot use the results in the plant-specific analyses (and testing) required by NUREG-0619. Significantly more detail will be required in their submittals, however, particularly with regard to the assumptions utilized in derivation of the various flow rates.

We concur that the GE-proposed procedure for optimization of CRD system flow to the pressure vessel provides a necessary first step toward reaching the desired goal. However, in our opinion it is too cumbersome with regard to measurement of pump discharge flow. When faced with the need to maintain water level upon loss of other capable high pressure water injection systems, the operator simply cannot be burdened with the need to refer to pump curves or the need to consider what, if any, other portions of system flow are not included in a respanned flow meter.

We believe that operators should be provided one or two meters capable of reliable direct measurement of one and two pump flow.

Sincerely,

Darrell G. Eisenhut

Darrell G. Eisenhut, Acting Director
Division of Operating Reactors
Office of Nuclear Reactor Regulation