



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

JAN 20 1981²

SSINS 6850

MEMORANDUM FOR: Carlyle Michelson, Director
Office for Analysis and Evaluation of Operational Data

FROM: James P. O'Reilly, Regional Administrator

SUBJECT: ABNORMAL OCCURRENCE REPORT TO CONGRESS FOR FOURTH
QUARTER CY 1981

In response to the J. L. Crooks memorandum of December 29, 1981,
enclosed are our comments for the subject report.


James P. O'Reilly

Enclosures:

1. Region II Comments - Abnormal Occurrence Report to Congress For Fourth Quarter CY 1981
2. Proposed Enclosure 3 Item

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ENCLOSURE 1

REGION II COMMENTS - ABNORMAL OCCURRENCE REPORT
TO CONGRESS FOR FOURTH QUARTER CY 1981

1. Possible Abnormal Occurrences

We have reviewed the Brunswick Units 1 and 2 event concerning marine organisms in the service water systems and do not object to its inclusion as an example of a generic concern involving blockage of coolant flow to safety-related systems and components. We would appreciate the opportunity to review the draft of this write-up as prepared by AEOD.

2. Possible "Enclosure 3" Items

We have reviewed the Hatch Unit 2 event concerning isolation of high drywell pressure switches and concur with its inclusion as an "Enclosure 3" item.

We propose the inclusion of Enclosure 2 as an "Enclosure 3" item.

3. Updated Material

The circumstances involving recent steam generator tube problems are contained in SECY 81-664, dated November 24, 1981. This document should be used as reference in formulating this update.

ENCLOSURE 2

PROPOSED "ENCLOSURE 3" ITEM

Overpressurization of the Reactor Coolant System

On November 30, 1981, Florida Power and Light Company reported that the Turkey Point Unit 4 reactor coolant system (RCS) was overpressurized on November 28 and 29 during startup following a refueling outage. The reactor was shutdown and the RCS was in a water solid condition with a pressure and temperature of approximately 310 psig and 110^oF, respectively. Two overpressure conditions of 1100 and 750 psig at 110^oF developed for which the overpressure mitigating system (OMS) failed to operate. These events exceeded the pressure limit of 400 psig at 110^oF specified in technical specifications which prescribes the allowable pressure and temperature limits to prevent reactor vessel brittle fracture.

The OMS is specifically designed to prevent this type of overpressurization. The reason the OMS did not operate as designed was as follows:

(1) A pressure transmitter was unintentionally isolated. This transmitter provides input into the OMS circuit to automatically open a power operated relief valve (PORV) on high pressure conditions; (2) A summator failed on the electrical circuitry which prescribed the pressure at which the OMS is to initiate PORV actuation; and (3) The redundant OMS circuit was out of service for calibration. The transmitter isolation valve was found closed and was opened after the first event. The failed summator was identified and corrected after the second event.

During both occurrences, the operator took action to stop the charging pump which was providing the source of rapid pressurization. RCS charging and letdown flow was in progress prior to each event. However, once the letdown was significantly reduced or terminated by closure of the residual heat removal system isolation valve, timely operator action to prevent the overpressurization was precluded by the rapidity of the transient. The operator decreased the pressure to the desired level within two minutes by manually opening the PORV. Procedural changes to include additional equipment checks were made as part of the corrective action. The NRC reviewed the incident and concluded that the licensee's assessment of the cause of the problem was correct and that corrective action had been taken to prevent recurrence.

A fracture mechanics analysis based on the method of Appendix G, Section III of the ASME Boiler and Pressure Vessel Code was performed by Westinghouse. The analysis showed that the integrity of the reactor vessel was not impaired by these transients. It was further judged that the fatigue life of the vessel was not significantly affected. An independent Florida Power and Light Company consultant reviewed the analysis and concurred with its conclusion. However, without the prompt action of the operator, the event had the potential to overstress the reactor pressure vessel through the brittle fracture mechanism. The NRC concurs with this assessment that reactor vessel integrity was not impaired and concludes that the incident represented no major reduction in the degree of protection of the health and safety of the public and so should not be classified as an Abnormal Occurrence.