

SEPTEMBER 27 1982

DMB 06

Docket No. 50-302

Mr. J. A. Hancock
Vice President
Nuclear Operations
Florida Power Corporation
ATTN: Manager, Nuclear Operations
P. O. Box 14042; M.A.C. H-2
St. Petersburg, Florida 33733

Dear Mr. Hancock:

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SUBJECT: CRYSTAL RIVER UNIT 3 (CR-3) - AUXILIARY (EMERGENCY)
FEEDWATER SYSTEM AUTOMATIC INITIATION AND FLOW INDICATION
(NUREG-0737 ITEM II.E.1.2)

We have completed our review of the information you provided on the design of the safety grade automatic initiation and flow indication of the CR-3 Emergency Feedwater System (NUREG-0737 Item II.E.1.2).

Based on our review, we have concluded that the CR-3 emergency feedwater automatic initiation and flow indication systems comply with the staff's long term safety grade requirements with one exception. Our Safety Evaluation Report (SER) and the Technical Evaluation Report (TER) prepared by our consultant, the Franklin Research Center (FRC) is enclosed.

The Emergency Feedwater (EFW) system design at CR-3 is such that its automatic initiation capability can be overridden from the control room and the EFIC (emergency feed initiation and control) room without control room indication of this override condition. NUREG-0737 Item II.E.1.2 states that the emergency feedwater system should meet the requirements of IEEE Standard 279-1971. Section 4.13 of that standard states "If the protective actions of some part of the system has been bypassed or deliberately rendered inoperable for any purpose, this fact shall be continuously indicated in the control room." Administrative controls, alone, are not sufficient to meet this requirement. Therefore, within 30 days of receipt of this letter, please provide a commitment to provide indication, in the CR-3 control room, when the automatic initiation capability of the EFW is overridden. In addition, please note that revised Technical Specification will be required for the upgraded EFW system that conform to the requirements of NUREG-0737 Item II.E.1.2 at a time that is appropriate

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Mr. J. A. Hancock

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to the installation and operation of the new EFW system. A guide for acceptable Technical Specifications can be found in Table 4.3-2 (Engineered Safety Features Actuation System Instrumentation Surveillance Requirements) of the Babcock and Wilcox Standard Technical Specifications.

Sincerely,

*ORIGINAL SIGNED BY
JOHN F. STOLZ*
John F. Stolz, Chief
Operating Reactors Branch #4
Division of Licensing

Enclosure:
Safety Evaluation

cc w/enclosure:
See next page

*subject to
correction of
mill ltr p3*

OFFICE	ORB#4:DL	C-ORB#4:DL	ICSB				
SURNAME	SMiner:cf	JStolz	FRosa				
DATE	9/23/82	9/27/82	9/27/82				

Crystal River Unit No. 3
Florida Power Corporation

50-302

cc w/enclosure(s):
Mr. S. A. Brandimore
Florida Power Corporation
Vice President and General Counsel
P. O. Box 14042
St. Petersburg, Florida 33733

Mr. Wilbur Langely, Chairman
Board of County Commissioners
Citrus County
Iverness, Florida 32650

Regional Radiation Representative
EPA Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Crystal River Public Library
668 N. W. First Avenue
Crystal River, Florida 32629

Mr. Robert B. Borsum
Babcock & Wilcox
Nuclear Power Generation Division
Suite 220, 7910 Woodmont Avenue
Bethesda, Maryland 20814

Mr. Tom Stetka, Resident Inspector
U.S. Nuclear Regulatory Commission
Route #3, Box 717
Crystal River, Florida 32629

Mr. T. C. Lutkehaus
Nuclear Plant Manager
Florida Power Corporation
P. O. Box 219
Crystal River, Florida 32629

Bureau of Intergovernmental Relations
660 Apalachee Parkway
Tallahassee, Florida 32304

Administrator
Department of Environmental Regulation
Power Plant Siting Section
State of Florida
2600 Blair Stone Road
Tallahassee, Florida 32301

Attorney General
Department of Legal Affairs
The Capitol
Tallahassee, Florida 32304

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

SAFETY EVALUATION
CRYSTAL RIVER UNIT 3
AUXILIARY FEEDWATER
AUTOMATIC INITIATION AND FLOW INDICATION
ACTION PLAN ITEM II.E.1.2

INTRODUCTION AND SUMMARY

To improve the reliability of Auxiliary Feedwater Systems (AFWS) at pressurized water reactor (PWR) facilities, the staff is requiring licensees to upgrade the system where necessary to ensure safety grade automatic initiation and flow indication. The criteria for this upgrading are contained in NUREG-0737 (Clarifications of TMI Action Plan Requirements), Section II.E.1.2.

The system known at Crystal River Unit 3 (CR3) as the Emergency Feedwater System (EFW), and the Emergency Feed Initiation and Control (EFIC) logic designs were evaluated for the NRC by Franklin Research Center (FRC) as part of a technical assistance contract program. The results of the FRC evaluation are reported in the attached Technical Evaluation Report (TER - C5257 - 282).

Based on our review of the FRC TER, we conclude that the AFW automatic initiation and flow indication designs are acceptable with the exception noted below. In addition, the licensee should submit new Technical Specifications for the EFWS.

EVALUATION

The attached TER provides a technical evaluation of the electrical, instrumentation, and control design aspects of the CR3 EFWS with regard to automatic initiation and flow indication. As noted in the TER, the EFW system automatic initiation capability can be overridden by operator action in the control room and the EFIC room, yet there is no indication of this override given in the control room. The licensee indicated that this override action is under administrative control. The staff position is that total reliance upon administrative controls is not sufficient and that automatic and continuous indication should be provided in the control room to indicate a bypass or the deliberately induced inoperability of a safety system. This indication should remain in effect until the system is returned to its normal operational status consistent with the requirements of Section 4.13 (Indication of Bypasses) of IEEE Standard 279-1971. Further guidance may be found in Regulatory Guide 1.47 (Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems).

The CR3 Technical Specifications have not been reviewed since the plant has not submitted revised Technical Specifications for their upgraded EFW system. Crystal River should submit new Technical Specifications to conform to the requirements

of NUREG-0737 for automatic and manual initiation of the EFWS. These specifications should include periodic testing of the initiating signals and the automatic actuation logic. The present Technical Specifications for EFWS flowrate are acceptable.

The environmental qualification of safety related systems including EFWS circuits and components is being reviewed by the Environmental Qualification Branch as part of their review of licensee responses to "Guidelines for Evaluating Environmental Qualification of Class 1E Electrical Equipment in Operating Reactors," issued to the licensee in NRR letter dated March 5, 1980.

- In order to adequately determine from the control room the performance of the EFWS, steam generator level instrumentation is used, in addition to flow indication. The requirements for this steam generator level instrumentation are specified in Regulatory Guide 1.97 Revision 2 (R.G. 1.97 - "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident").

CONCLUSION

Based upon our review of the Franklin Research Center TER, we conclude that the Crystal River Unit 3 EFWS automatic initiation and flow indication systems comply with the staff's long term safety grade requirements, except that automatically actuated continuous indication should be provided in the control room when the automatic initiation capability is overridden.

The CR3 Technical Specifications should be revised to include full periodic testing of the automatic and manual initiation of the EFWS.