



**Florida
Power**
CORPORATION

December 19, 1985
3F1285-03

Director of Nuclear Reactor Regulation
Attention: Mr. John F. Stolz
PWR Project Directorate No. 6
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
Appendix R/Fire Protection Evaluations

Dear Sir:

Attached are evaluations four and five of Fire Protection features at Crystal River Unit 3 (CR-3). The Florida Power Corporation (FPC) staff, with the assistance of fire protection engineering consultants and our architect engineer, has evaluated these features and has determined that they provide an acceptable level of protection for safe shutdown capability at CR-3. We request that these evaluations be forwarded to the appropriate NRC Staff for review, evaluation, and concurrence.

By letter dated July 25, 1985 (3F0785-31), FPC submitted evaluations one, two, and three. In accordance with 10 CFR 170, attached is check number 788935 for the one hundred fifty dollars (\$150) application fee for the review of these evaluations.

Should you have any questions or require further information, please contact this office.

Sincerely,

G. R. Westafer
Manager, Nuclear Operations
Licensing and Fuel Management

SCP/feb

Attachments

8512240109 851219
PDR ADOCK 05000302
F PDR

*Rec'd w/ check
for \$150.00*

*A006
111*

FIRE PROTECTION EVALUATION #4

DOMESTIC WATER SUPPLY TO NUCLEAR SERVICES AND DECAY HEAT SEAWATER PUMP BEARINGS

DESCRIPTION OF ISSUE:

In accordance with the requirements of 10 CFR 50, Appendix R, the Nuclear Services seawater pumps and the decay heat seawater pumps are considered hot and cold shutdown equipment, respectively. Both sets of pumps are provided with bearing flush water from the domestic water system, with back-up from the Nuclear Services closed cycle cooling water system (NSCCCWS). Based on vendor information, the Appendix R safe shutdown analysis for Crystal River 3 (CR-3) determined that neither flush water system was necessary to support safe shutdown. Through further discussion between Engineering and Operations questioning the validity of the vendor information, it was found that, in fact, without either A or B domestic water pump, or without opening of either redundant back-up supply valve from the NSCCCWS, the seawater pumps would fail. None of the redundant bearing flush water systems were analyzed for the effects of fire.

CORRECTIVE ACTIONS:

Upon discovery of this situation, an immediate check was performed to determine the routing of cables for the domestic water pumps. The domestic water pumps, their cables and power supplies are all located in areas that are being covered by 20 minute roving fire watches. These fire watches are compensation for NRC-approved schedular relief to complete wrapping of safe shutdown cables by March 31, 1986.

Modifications are planned which will provide bearing flush water from the pumpage of the seawater pumps themselves. This will make the domestic water and NSCCCWS supplies unnecessary for safe shutdown. These modifications will be completed by March 31, 1986. Roving fire watches will continue in the areas containing components necessary for maintenance of the current bearing flush water supply until modifications are complete.

EVALUATION:

The domestic water pumps, their cables and power supplies are all located in areas covered by roving fire watches. The roving fire watches visit all areas once every 20 minutes and look for evidence of fire. These areas are also provided with automatic fire detection and automatic wet pipe sprinklers. Alternate sources of bearing flush water are available to the seawater pumps from the NSCCCWS through redundant motor-operated valves. Depending on fire location, one of these valves could be either remotely opened or opened manually at the valve. Redundancy, coupled with the protection provided to

- 1) assure that any fire is quickly found, and
- 2) assure any fire found is quickly suppressed,

assures that until modifications are made, that safety shutdown capability will be preserved.

FIRE PROTECTION EVALUATION #5

CR-3 HOSE STATION LENGTH DISCREPANCIES

DESCRIPTION OF ISSUE:

In the Safety Evaluation Report (SER) for BTP 9.5-1, Appendix A (Fire Protection Issues) dated July 27, 1979, the subject of existing fire suppression hose stations is addressed in two places. Under Section 3.0, Summary of Modifications, Item 3.24, Interior fire hose stations, FPC was instructed to:

"Verify that all safety-related areas including the control complex can be reached with at least one effective fire hose stream utilizing no more than 100 feet of hose. (4.3.1.4)"

In Section 4.0, Evaluation of Plant Features, Subsection 4.3.1.4, Interior Fire Hose Stations, the NRC states, in part:

"There is insufficient fire hose on the reels to reach all areas; however, plant firefighting procedures call for the fire brigade to respond with additional woven jacketed fire hose to be attached to the hard rubber hose if necessary to provide adequate length. The licensee has verified that, with this arrangement, all safety-related areas, including the control complex, can be reached with at least one effective fire hose stream utilizing no more than 100 feet of hose.

The licensee has proposed to install a standpipe with a suitable number of stations inside the reactor building.

We find that, subject to the above described modification, the interior fire hose stations satisfy the objectives identified in Section 2.2 of this report and are, therefore, acceptable."

A search of fire protection correspondence did not disclose any in which FPC provided this specific verification prior to issuance of the SER. By letter dated July 23, 1980, FPC listed Item 3.24, along with a number of other items, in tabular form indicating closure. The table is provided at 'Attachment 1'.

In July 1985 in preparation for an NRC Fire Protection/Appendix R inspection, FPC conducted a plant walkdown which identified two safety-related areas which could not be reached with 100 feet of hose. Safety-related areas were adequately protected since the fire brigade response carts are equipped with additional lengths of hose which can be utilized if necessary.

CORRECTIVE ACTIONS:

FPC utilized a fire protection engineering contractor to evaluate the effects of using longer hose on the existing hose stations. That evaluation is included as 'Attachment 2'. The evaluation demonstrated that an effective hose stream will be provided from any hose station using 150 feet of hose. FPC has added hose to those stations requiring more than 100 feet of hose to reach safety-related areas. New hose is being procured to equip all hose stations with 150 feet of hose.

EVALUATION:

The stand pipe system at Crystal River Unit 3 (CR-3) is designated as a Class II system in accordance with NFPA 14. Class II systems are designed for use by untrained personnel such as building occupants and are limited by NFPA 14 to utilizing 100 feet of hose or less. The CR-3 hose stations are used by trained fire brigade personnel only; general employees are instructed to use fire extinguishers and await fire brigade response. It is our position that use of 150 feet of hose on our system is an acceptable alternative since:

- 1) Adequate water supply exists (flow rate and pressure) to provide an effective hose stream from any hose station in the plant through 150 feet of hose, and

- 2) Hoses are used only by trained fire fighting personnel with the knowledge and experience to handle greater than 100 feet of hose.

ATTACHMENT 1

TABLE 1

STATUS OF FIRE PROTECTION MODIFICATIONS

MODIFICATIONS ALREADY COMPLETED

SER ITEM	MODIFICATION COMPLETION DATE	NRC APPROVAL DATE	PRIORITY FOR REVIEW/MODIFICATION
3.3	<p style="text-align: center;">↑</p> <p style="text-align: center;">All these modifications are completed as of July 1, 1980.</p> <p style="text-align: center;">↓</p>	<p style="text-align: center;">↑</p> <p style="text-align: center;">NRC approved these in the SER.</p> <p style="text-align: center;">↓</p>	<p style="text-align: center;">↑</p> <p style="text-align: center;">Not applicable since already installed.</p> <p style="text-align: center;">↓</p>
3.4			
3.9			
3.11			
3.13			
3.16			
3.19			
3.21.1			
3.21.3			
3.22			
3.24			
<p>Legend: Priorities are based upon lead time for all items, except for Item 3.1; priority for Item 3.1 is based upon both lead time and safety considerations.</p> <p>Highest Priority - 1</p> <p>Higher Priority - 2</p> <p>High Priority - 3</p> <p>Low Priority - 4</p>			

ATTACHMENT 2