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January 15, 1982
JPN-82-10

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. Thomas A. Ippolito, Chief
Operating Reactors Branch No. 2
Division of Licensing

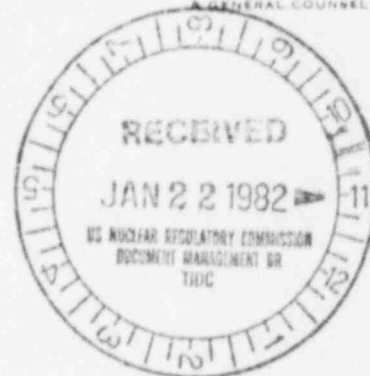
Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Generic Safety Evaluation Report Regarding Integrity
of BWR Scram System Piping, NUREG-0803

Reference: 1. NRC letter, D.G. Eisenhut to All GE BWR Licenses
(except Humboldt Bay), dated August 31, 1981
(Generic Letter 81-34)

Dear Sir:

NUREG-0803 evaluated a typical BWR to determine the consequences of a postulated rupture of the scram discharge volume (SDV) coincident with a reactor scram which cannot be reset. No credit was taken for continued operation of the Control Rod Drive (CRD) pumps. For a typical BWR, the NUREG concluded that the potential consequences of this accident include environmental conditions which may degrade safety related equipment in the reactor building.

Reference 1 requested that the FitzPatrick plant be evaluated for the environmental conditions, specified in NUREG-0803, which would exist in the typical BWR following the postulated accident. However, the consequences of the postulated accident would be significantly less severe for the FitzPatrick plant due to differences in plant design. These differences are detailed below, following a description of actions taken by the Power Authority in response to Reference 1.



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The Power Authority has initiated the requested equipment qualification (EQ) reviews identified in Table 5.1 of NUREG-0803. This review will be performed in conjunction with the ongoing EQ Program, although the additional effort may necessitate a future request for a schedule extension. The Power Authority will review the FitzPatrick plant in accordance with the environmental conditions for the typical BWR as specified in NUREG-0803, rather than performing a detailed analysis of the accident to determine plant-specific conditions. However, if the EQ review determines that substantial modifications to the plant would be required, the Power Authority may perform an analysis to determine specific environmental conditions for the FitzPatrick plant and submit the analysis to the NRC.

Reference 1 requested an as-built inspection and seismic design verification of the SDV piping and supports. This has already been completed in response to NRC Bulletins 79-02 and 79-14. Modifications to the SDV system resulting from this review are scheduled for completion during the current Reload 4/Cycle 5 outage.

The SDV piping will be included in a revision to the FitzPatrick Inservice Inspection Program, and inspected in accordance with the applicable provisions of Section XI of the ASME Code. The inspections of the existing and modified piping will begin following completion of the SDV modification described below. This modification is currently scheduled for the 1983 Reload 5/Cycle 6 refueling outage.

A schedule was requested for the completion of a review of hydraulic control unit and SDV maintenance, surveillance and modification procedures. The Power Authority has completed this review and has modified one procedure to provide greater assurance that operability and system integrity will not be compromised.

The Power Authority has reviewed the FitzPatrick reactor coolant activity limits as requested. An examination of operating data from 1978 through 1981 shows that the FitzPatrick plant exceeded the Standard Technical Specifications (STS) coolant activity limits only once during 1044 operating days, and this occurred during a power transient. Normally, coolant activity is well below STS limits. This review will be formally documented in a report now in preparation. The Power Authority considers that the existing FitzPatrick reactor coolant activity limits meet the criteria of NUREG-0803.

The NRC staff has also requested revision of the Emergency Procedure Guidelines to assist the operator in responding to this postulated accident. The BWR Owners' Group has discussed the guidance of NUREG-0803 regarding modification of the Emergency Procedure Guidelines, and acknowledges the benefits of treating the subject generically. The BWR Owners' Group is in the process of completing an extension of the Guidelines to include steps for

reactivity control, and certain other modifications to the Guidelines which have been discussed with the NRC staff. After current activities on the Guidelines are substantially complete, the Power Authority will support a preliminary study by the BWR Owners' Group to determine the best approach to fulfilling the intent of the guidance provided in NUREG-0803. When that study is complete, currently expected to be near the end of the first quarter of 1982, the Owners' Group will determine whether to authorize specific actions to modify the Emergency Procedure Guidelines. The Power Authority will advise you of the result of that decision and the Owners' Group plans at that time.

As stated above, there are several factors which would significantly alleviate the consequences of the postulated accident in the FitzPatrick plant. Since the FitzPatrick plant has 137 CRDs, the assumed 3 gpm per CRD results in a break flow of approximately 410 gpm. The typical BWR has 185 CRDs and a resulting break flow of approximately 550 gpm.

The FitzPatrick CRD pumps are powered from the emergency busses and can be assumed to continue operation following a scram. Therefore, the CRD leakage flow will be mixed with the relatively cool pump flow. The break flow temperature will be significantly reduced, resulting in a corresponding decrease in the severity of the accident consequences.

The Power Authority has previously committed to modify the SDV. This modification will provide each SDV with a separate instrument volume resulting in the complete physical separation of the SDVs. Postulating the failure of a single SDV, which services 69 CRDs, would reduce the break flow to approximately 205 gpm.

The Power Authority considers this initial response complete. If you have any further questions, please do not hesitate to contact us.

Very truly yours,

G. M. Wilverding

for J. P. Bayne
Senior Vice President
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