

**Florida
Power**
CORPORATION

November 13, 1989
3F1189-12

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

Subject: Crystal River Unit 3
Docket No. 50-302
Operating License No. DPR-72
HPI Line Break - Revised Justification for Continued
Operation

Dear Sir:

In Florida Power Corporation's (FPC) October 27 and 31, 1989 correspondence, FPC documented the actions taken to address concerns associated with HPI flow instrumentation. That correspondence, and several teleconferences, provided the basis for the NRC to agree with FPC that restart of CR-3 would pose no risk to public health and safety. The problem for which the unit had been removed from service was completely corrected and there were no compliance issues which warranted extending the plant's outage. Continued discussions have refocused the issue and warrant a revised Justification for Continued Operation.

In 1978, Babcock & Wilcox's (B&W) evaluation of the mitigation of cold leg small break loss of coolant accidents (SBLOCA) required operator action to assure flow rates consistent with existing licensed analysis. The operator action was to balance the flow through each of four HPI injection legs to achieve a flow split wherein no more than 30% of the operating HPI pump flow goes into the cold leg containing the break. This flow balancing requirement was written into B&W's ATOG Technical Basis Document (TBD) as part of the post-TMI improvements to give the operators more information about transients. In 1979, FPC evaluated the CR-3 HPI piping system and determined that a cold leg SBLOCA does not require operator intervention. The HPI piping and valve arrangements assured the 70/30% flow split.

The TBD states a further purpose of flow balancing is to address HPI line breaks between the last HPI check valve and the RCS. The CR-3 design and licensing basis did not address the specific SBLOCA

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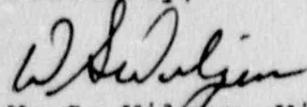
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in the HPI line. This difference between the TBD requirement for flow balancing for HPI line SBLOCAs and the CR-3 design/licensing basis was due to information provided by B&W in 1981 which indicated that FPC need not postulate such breaks. On October 17, 1989, B&W stated that they could not substantiate the position provided in the 1981 correspondence. FPC initiated its potential design basis non-conformance determination procedure. Prior to this determination, CR-3 was in compliance with its design/licensing basis regarding the instrumentation accuracy necessary for an operator to mitigate an accident.

On October 26, 1989, FPC determined that CR-3 was operating outside its design basis because it was not in compliance with 10CFR50.46. FPC recognized that the accuracy of the existing instrumentation in the flow range of principal interest was insufficient to assure flow which is consistent with the analytical requirements and FPC shutdown the unit. The reason for shutdown of the unit was not the lack of safety related instrumentation, but the instrument accuracy in the low flow range as described above. The accuracy problem has been corrected by installing additional instrumentation with the proper flow range. Based on that corrective action, FPC declared the HPI trains operable and returned the unit to service following NRC verbal concurrence (Gus Lainas to Ken Wilson, October 31, 1989).

FPC is evaluating several alternatives to resolve this issue by Refuel 7. The evaluation is examining instrumentation solutions, as well as, passive solutions where operator action would not be required to mitigate an event. We will continue to keep the staff informed of our progress.

Sincerely,



W. S. Wilgus, Vice President
Nuclear Operations

WSW:KRW:ead

Attachment

xc: Regional Administrator, Region II
Senior Resident Inspector

JUSTIFICATION FOR CONTINUED OPERATION

REQUIREMENT

Instrumentation necessary to support design basis event mitigation must be safety-related.

DISCREPANCY

Portions of this instrumentation are non-safety-related. The characteristics not meeting Class 1E requirements include separation of safety-related and non-safety-related circuits in the associated trains, redundancy, and seismic qualification of the panel in the main control room. Each circuit is routed through non-safety-related trays containing non-safety circuits. The Redundant Instrument Panel (RIP) located on top of the main control board is seismically supported. The instrumentation mounted in the RIP has not been seismically qualified.

JUSTIFICATION

FPC considers adequate justification for operation is provided until Refuel 7 without fully safety-related instrumentation based on the limited reduction in reliability resulting from the non-safety aspects of the circuitry. Further, the event probability is extremely small.

FPC does not consider these limitations to decrease significantly the instrumentation reliability. Redundancy is provided by non-safety-related wide-range instrumentation. Seismic events are not a significant contributor to risk for plants in peninsular Florida. If all indication fails, unavailability of two of the three HPI pumps would still be required to prevent mitigation of the event.

The probability of this event is extremely remote. The probability of a break in an injection line downstream of the last check valve occurring between November 1, 1989 and Refuel 7 has been calculated to be $1.6 \text{ E-}07$. The probability of this event occurring at the same time with only one HPI pump available is $1.5 \text{ E-}09$.

FPC concludes that the likelihood of the instrumentation being relied upon to perform a design basis mitigation function is extremely remote. Further, the instrumentation is, in fact, highly reliable even though not fully safety-related. Therefore, continued operation is well supported until Refuel 7.