

**GPU Nuclear**

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September 19, 1985
RFW-0614

Mr. John A. Zwolinski, Chief
Operating Reactors Branch No. 5
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Zwolinski:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
NUREG 0737 Item II.K.3.19
Recirculation Loop Interlock

In our letter dated July 26, 1985 in Attachment 2, we listed eight (8) items for which we propose cancellation or scope change. This letter addresses item 5 of that list and provides our justification for a scope change from that originally proposed for the Recirculation Loop Interlock (NUREG 0737 Item II.K.3.19).

The Recirculation Loop Interlock requirement resulted from the evaluation of feedwater transients and small break LOCAs in GE BWRs presented in NUREG 0626. For non-jet pump plants like Oyster Creek, isolation of all five recirculation loops results in inadequate communication of coolant between the downcomer and core regions in the reactor vessel. Interlocks were recommended to assure that at least two recirculation loops are open for recirculation flow for modes other than cold shutdown so that level measurements in the downcomer region are representative of the level in the core region.

The interlock, as originally proposed, consisted of an electrical interlock which would prevent closure of valves to isolate no more than three out of five recirculation loops. The modification also included an alarm to warn the operator that the interlock has been activated and a bypass switch and circuit to allow isolation of loops when conditions permit.

During the review of the interlock design, it was determined that by simplifying the modification to an alarm only the functional requirements could be adequately met. The alarm provides positive active indication to the operator that a fourth loop has been isolated. Since isolation of a fourth loop does not cause any short term problems with core inventory, the operator has adequate time to recognize and correct the problem indicated by the alarm, therefore, a preventive interlock is not necessary.

The reduced scope modification has the advantage of not requiring an additional control switch for interlock bypass and additional indications on the control board of a bypass condition, of greatly reducing the complexity of the valve control circuitry thereby minimizing the affect on circuit reliability and of simplifying training requirements and procedural changes

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The NRC Staff evaluation, presented in NUREG 0626, did not take into consideration a fuel zone level monitoring system for Oyster Creek vintage plants. During the 1979-80 Cycle 9 refueling outage wide range fuel zone level indication and recorder were installed. With recirculation pumps tripped this instrumentation provides the reactor operator with level indication in the core region. Also, the lo-lo-lo water level trip for ADS initiation concurrent with high drywell pressure is sensed within the core region.

Oyster Creek Technical Specifications require that at least two recirculation loop suction valves and their associated discharge valves be in the full open position during all modes of operation except when the reactor head is off and the reactor is flooded to a level above the main steam nozzles. This requirement is addressed in plant operating procedures and licensed operator training.

In conclusion, the Human Factors review of this modification determined that the functional requirements of preventing core region isolation from the downcomer can be met by the reduced scope modification which adds alarm capabilities and that the interlock provides additional complexity not justified by the benefit gained. The reduced scope modification will be installed during our upcoming Cycle 11 refueling outage in accordance with the NRC Order dated March 14, 1983.

If you should have any questions, please contact Mr. Michael W. Laggart, Manager BWR Licensing, at (201) 299-2341.

Very truly yours,

J. F. Wilson

R. F. Wilson,
Vice President and Director
Technical Functions

RFW:gpa
2250f/001
Attachment

cc: Dr. Thomas E. Murley, Administrator
Region 1
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

NRC Resident Inspector
Oyster Creek Nuclear Generating Station
Forked River, NJ 08731

Mr. Jack Donohew
U.S. Nuclear Regulatory Commission
7920 Norfolk Avenue
Phillips Building, Mail Stop 314
Bethesda, Maryland 20014

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