

DUKE POWER COMPANY

POWER BUILDING

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VICE PRESIDENT
STEAM PRODUCTION

April 14, 1978

TELEPHONE AREA 704
373-4083

Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

RE: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287

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Dear Mr. Case:

As you are aware, the small break ECCS analysis of the 0.04 sq. ft. break for Oconee class plants was performed with the assumption that this break occurs at the pump suction of the reactor coolant piping, as reported in BAW-10103, Revision 3, and in BAW-10052. Recently, it has been identified that a 0.04 sq. ft. break occurring at the pump discharge would be more limiting if it is assumed that only one high pressure injection (HPI) pump is available for core cooling. B&W has now performed an evaluation of this break at the pump discharge for Oconee 1, 2, and 3 by considering that two HPI pumps are available at 25 minutes. The results indicate that the core remains covered by fluid at all times without any cladding temperature excursion.

Each of the Oconee units has three HPI pumps normally available, and all three pumps are automatically started upon Engineered Safeguards signal actuation. The flow discharged from these pumps is injected into the reactor coolant system through two independent injection lines, each branching into two smaller lines, and terminating into the reactor coolant cold leg piping between the pump discharge and the reactor vessel nozzle, as shown in Figures 6-2 and 9-2 of the Oconee FSAR. The two injection paths and two HPI pumps are adequate to provide the necessary flow into the core to maintain the core covered with fluid at all times.

The HPI pumps are powered by three independent 4160V switchgears. If a single failure is assumed to occur, there would still be two HPI pumps available to provide flow to the core. If a single failure were to occur on HPI Pump C, then the normally closed manual valves, HP-116 and HP-117, would have to be opened to ensure that sufficient flow is available through both injection lines. B&W's evaluation shows that at least 25 minutes is available to the operators to accomplish this task, and it is considered an adequate time interval (5 minutes to confirm no flow indication in HPI Line B, 5 minutes transit time, and 10 minutes to open the valves) to accomplish this operation. If, however, the single failure

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Mr. Edson G. Case, Acting Director

Page Two

April 14, 1978

were to occur with Valve HP-26, then it would be the A injection line without the flow. In this case, the operator would have to manually open Valve HP-26, and 25 minutes is more than adequate time to accomplish this task.

The emergency operating procedures for loss of coolant accident conditions will be revised by April 14, 1978, to include sufficient guidance and instructions for the operators to take the above described actions. It should be pointed out that the above manual actions are needed only under one of two independent single failure conditions (failure of HPI Pump C or failure of Valve HP-26), and this situation can be easily recognized from flow, pump status, and/or valve indications.

Also, the manual valves HP-99 and HP-100, which are currently closed during normal operation will now be kept open during normal operation, and the ES valve HP-25, currently kept open, will be kept closed. This change in the valve lineup is being made to assure that adequate suction flow is available for the HPI pumps if a single failure were to occur in Valve HP-24. This valve lineup will be applied at the time of implementing the change to the emergency operating procedure. It is pointed out that the HPI pump suction line will be full of water with the revised valve configuration also.

By April 21, 1978, we will submit a proposed revision to Technical Specification Section 3.3 to require the operability of all three HPI pumps, except as permitted by Specification 3.3.5. All three pumps are currently operable, and we will notify the NRC-ONRR if an HPI pump becomes inoperable for a period exceeding 24 hours.

In summary, the emergency core cooling requirements for the 0.04 ft² break at the pump discharge are satisfied, and it is concluded that Oconee units can continue to be safely operated at the rated power.

Very truly yours,

William O. Parker, Jr.
William O. Parker, Jr. *By [Signature]*

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