

December 20, 1989

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AEOD/T928

THRU: Peter Lam, Chief
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SUBJECT: INADEQUATE OVERPRESSURE PROTECTION FOR AUXILIARY
STEAM HEADERS AT THE OCONEE PLANTS

Enclosed is a technical review report on inadequate overpressure protection for the auxiliary steam headers at Oconee Nuclear Power Station. Discovery of this problem evolved as a result of inquiries by the NRC inspectors following a Safety System Function Inspection (SSFI) in May and June of 1986. The NRC inspectors questioned the adequacy of the existing safety valve (AS-23) to provide overpressure protection in the event both control valves (MS-126 and MS-129) went fully open during a design basis event. The design basis event corresponds to an event that would cause steam generator pressure to reach 1050 psig (the lowest secondary safety valve set point pressure).

The auxiliary boiler or main steam system supplies steam to the auxiliary steam header. The emergency feedwater pump turbine (EFWPT) runs on steam from the auxiliary steam header during startup or shutdown operations when main steam header pressure is less than 200 psig. The relevant safety concern was the potential overpressurization of the steam line to the EFWPT as a result of a malfunction of control valves MS-126 and MS-129 or manual valve MS-131 completely opening during a design basis event. Control valves MS-126 and MS-129 and manual valve MS-131 are each in the parallel steam lines to the EFWPT. Initially, the licensee lacked formal calculations to demonstrate the adequacy of the relieving capability of AS-23. Follow-up calculations by the licensee verified that the safety valve capacity was inadequate. Following discovery of this problem, the licensee immediately put temporary travel stops on control valve MS-126. To permanently correct the problem, the licensee installed two additional safety valves.

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Installation of additional safety valves in Oconee Unit 2 was completed in June 1989. Installation of additional safety valves at Unit 1 and 3 were completed earlier in 1989. Permanent addition of safety valves gives adequate protection to the steam line leading to the EFWPT.

Investigation of the problem consisted of: 1) review of the SSFI reports, 2) search of B&W LER events, and 3) following licensee resolution of the problem and review relevant NRC inspection reports. From our investigation, it would appear that this design deficiency was plant specific. Appropriate corrective actions were taken by the licensee, and further regulatory action would not be appropriate at this time.

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Enclosure: As stated

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