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 AUTH. NAME AUTHOR AFFILIATION
 HAMPTON, J.W. Duke Power Co.
 RECIP. NAME RECIPIENT AFFILIATION
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SUBJECT: Forwards written followup to waiver of compliance from TS 3.3.2a(2), "LPIS," per util 920930 request. Extension of 72 h requested so that sufficient time available to adequately develop procedures for testing LPSW sys.

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Duke Power Company
Oconee Nuclear Generation Department
P.O. Box 1439
Seneca, SC 29679

J.W. HAMPTON
Vice President
(803)885-3499 Office
(704)373-5222 FAX



DUKE POWER

October 1, 1992

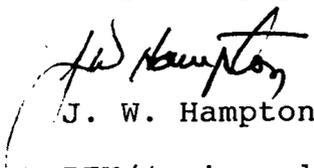
U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

Subject: Oconee Nuclear Station, Units 1 and 2
Docket Nos. 50-269, -270
Waiver of Compliance
T.S. 3.3.2, Low Pressure Injection System

This letter provides written followup to the waiver of compliance from Technical Specification (TS) 3.3.2a(2) requested by Oconee Nuclear Station on September 30, 1992. The attachments provide a complete discussion of the waiver being requested, the justification and the safety significance. Also, the attachment discusses the basis for Duke's determination that this waiver involves a No Significant Hazards Consideration according to the standards of 10 CFR 50.92.

This waiver has been approved by the Site Management Team for Oconee Nuclear Station.

Very truly yours,


J. W. Hampton

REH/(waiver.ltr)

attachment

xc: Mr. P. E. Harmon
Senior NRC Resident Inspector
Oconee Nuclear Station

Mr. S. D. Ebnetter
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
101 Marietta Street, NW., Suite 2900
Atlanta, GA 30323

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October 1, 1992
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xc: Mr. L. A. Wiens
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, DC 20555

Mr. Heyward G. Shealy
Bureau of Radiological Health
SC Dept. of Health & Environmental Control
2600 Bull St.
Columbia, SC 29201

OCONEE NUCLEAR STATION

REQUIREMENT FROM WHICH RELIEF IS SOUGHT

Oconee Nuclear Station is requesting relief from Technical Specification (TS) 3.3.2 a.(2). This TS requires that two independent Low Pressure Injection System (LPI) trains be maintained operable when RCS pressure is at or above 350 psig. or Reactor Coolant System (RCS) temperature is at or above 250°F. The TS allows tests or maintenance to be performed on any LPI system component provided that the redundant train is operable. If the LPI system is not restored to meet the requirements of the TS within 24 hours, the reactor shall be placed in hot shutdown within 12 hours. Oconee is requesting that the 12 hour period allowed for placing the reactors in a hot shutdown condition be extended to 84 hours for Units 1 and 2. The 12 hour action period was entered at 1510 on September 30, 1992. Approval of this request for relief would extend the period considering the compensatory measures discussed below until 0310 on October 4, 1992.

DISCUSSION OF CIRCUMSTANCES AND NEED FOR PROMPT ACTION

The (LPI) system coolers are cooled by Low Pressure Service Water (LPSW). The LPSW system is shared between Units 1 and 2 and consists of 3 low head centrifugal pumps and associated system piping. During normal operation the LPSW system supplies cooling water to various operating components. During an Engineered Safeguards actuation on Unit 1 or 2 the LPSW system, in addition to supplying the normal cooling loads of the unaffected unit also supplies cooling water flow to the following components on the affected unit to mitigate the consequences of an accident:

- HPI Motor Coolers
- Reactor Building Cooling Units
- Low Pressure Injection Coolers
- Motor Driven EFDW pumps motor coolers
- TD EFDW pump bearing coolers.

At 1510 on 9/29/92 a review of LPSW pump test data indicated that the LPSW pumps could provide greater flow than previously assumed in LPSW flow calculations. These flow calculations are associated with the LPSW system flow model which has been utilized on Units 1 and 2 to model system response assuming worst case postulated failures. The worst case failure on the LPSW system which affects the operability of the LPI coolers is during a postulated Loss of Coolant Accident / Loss of Power (LOCA/LOOP) with a

loss of instrument air concurrent with a single failure (failure to open) of either one of the outlet valves on the LPSW side of the LPI coolers. Conservatively assuming no Operator action to respond to the high flow condition, failure of both LPI coolers could result: one LPI cooler not available due to no LPSW flow and the other LPI cooler failing at some finite time after the event due to high LPSW flow (flow induced vibration of tubes).

Upon entering the 24 hour LCO at 1510 on 9/29/92, it was originally thought that sufficient LPSW flowpaths could be established to preclude the high flow condition on an LPI cooler assuming a single failure. Upon further evaluation and system modeling, it was determined that there would not be sufficient engineering justification to support the establishment of additional flowpaths without actual system testing. This testing of the LPSW system cannot be adequately performed at power without jeopardizing Unit operation due to the large flow requirements of the Main Turbine Oil Coolers on the LPSW system. Additionally, performing the testing at cold shutdown would adversely affect the decay heat removal capabilities of the LPSW system. For this reason it is desired to perform the testing at a low reactor power level with the Unit 1 and 2 main turbines off-line.

The prompt action to extend the timeframe for "placing the reactors in a hot shutdown condition" is predicated on the agreement that reactor power levels will be reduced to < 10% within the original 12 hours and remain < 10% until successful completion of the LPSW system testing or the 72 hour extension, whichever occurs first. This will allow sufficient time for testing the LPSW system at a point where steam generators can be utilized as a source of steam to drive the main feedwater pumps to provide redundant heat removal capabilities. The primary purpose of this testing will be to bound the worst case conditions for both excessive flow to the LPI coolers and insufficient flow to the Reactor Building Cooling Units. This testing will provide the data needed to set flow limiting devices (travel stops) on the LPSW flow controllers for the LPI coolers and also verify the rest of the LPSW system flow characteristics. Performance of the LPSW system testing at the low power levels with the main turbines off-line is more desirable from a safety standpoint than attempting to do the testing with two units at cold shutdown with the LPSW system providing the primary source of decay heat removal.

DISCUSSION OF WHY THE SITUATION COULD NOT HAVE BEEN AVOIDED

As stated above, upon entering the 24 hour LCO at 1510 on 9/29/92 it was originally thought that sufficient LPSW flowpaths could be established to preclude the high flow condition on an LPI cooler assuming a single failure. There was not sufficient confidence in the results of the LPSW flow model for establishing additional system flowpaths to limit LPI cooler LPSW flow. The primary concern was that the model was predicting NPSH values for the LPSW pumps which were not substantiated by manufacturers data

at the higher flowrates. It was determined that there was not sufficient justification for supporting the predicted values without validating with actual test data. Testing at power or testing during cold shutdown are not considered to be desirable options due to the demands on the LPSW system at these times for both Units 1 & 2.

DISCUSSION OF COMPENSATORY ACTIONS

Although the extension of the required action time for placing the reactors in a hot shutdown condition being requested would allow operation at power levels of up to 100%, Units 1 and 2 will be reduced in power to < 10% reactor power levels within the original 12 hour timeframe. The remaining 72 hours will be utilized for performing the LPSW system testing. Additionally, all of the normal ES functions for both units will be maintained throughout this period. Following the completion of successful testing and the setting of the flow limiting devices (travel stops) on the LPSW flow controllers for the LPI coolers, Oconee Management will have discussions with NRC Region II Management prior to escalating reactor power above 10%.

SAFETY SIGNIFICANCE AND POTENTIAL CONSEQUENCES

Units 1 and 2 are currently in a degraded mode of operation due to the determination that a LOCA/LOOP event with a loss of instrument air, coupled with a failure to open of an isolation valve on the LPSW side of an LPI cooler would result in a flow configuration that involves excessive flow to the other LPI cooler. This excessive flow would exceed the cooler manufacturer's specifications for continuous flow duty.

Technical Specification 3.3.2 currently allows operation in a degraded mode without two independent trains of the LPI system for up to 24 hours. Following this 24 hours, an action statement imposes an additional requirement to be in a hot shutdown condition within 12 hours. The proposed waiver would allow an extension of an additional 72 hours to the action for placing the reactors in hot shutdown conditions. During this extended period of time, Units 1 and 2 will be able to withstand a LOCA/LOOP event but could not withstand an additional failure of a specific safety function, i.e. failure of a valve that isolates LPSW from an LPI cooler. The low probability of this occurring within a short period of time is why the Technical Specifications allow this condition to occur for brief periods. If the proposed waiver is granted, the probability of this specific event occurring during the additional 72 hours is very low. Also, the units will be operated at very low power levels (less than 10%) during testing, so the consequences of a LOCA/LOOP event would be reduced due to the reduced heat energy that would have to be removed by the LPI system.

Also, by extending the time of the action to place the reactors in hot shutdown, the units can be maintained at a power level that would provide redundant means of maintaining adequate steam to the main feedwater pumps which in turn provides an additional source of removing decay heat. If Units 1 and 2 were required to shutdown, core cooling using main feedwater would be dependent upon steam from Unit 3. If Unit 3 were to experience an inadvertent shutdown, the main feedwater pumps would not be available. By maintaining a low reactor power level during testing instead of testing at hot shutdown, the main feedwater pumps can be supplied adequate steam for their operation. Additionally, maintaining the units above cold shutdown for LPSW system testing prevents having to test the system when it would be required for decay heat removal.

DISCUSSION WHICH JUSTIFIES THE DURATION OF THE REQUEST

The extension of 72 hours is desired so that sufficient time is available to adequately develop the procedures for testing the LPSW system and to provide sufficient time to perform the testing without having to maneuver the units while doing the testing. The additional time spent in a degraded mode increases the vulnerability should an event occur, however, at the reduced power levels the consequences would not be as great as at higher power levels. Additionally, from a shutdown risk standpoint, it is more desirable to perform the testing while the steam generators are still available to remove sensible and decay heat and supply steam to the main feedwater pumps. This precludes doing the testing at a point where the only method of decay heat removal is with the LPI coolers.

NO SIGNIFICANT HAZARDS CONSIDERATION

The changes requested under this waiver of compliance do not involve a significant hazards consideration. The following is the justification of this position based on the standards of 10 CFR 50.92:

1. This proposed change would not involve a significant increase in the probability or the consequences of an accident previously evaluated. Since the existing Technical Specification allows 12 hours to place the reactors in hot shutdown from this degraded mode, the consequences of an accident are no different than before. The probability of an accident is slightly increased by extending the time that this degraded mode is allowed to exist; however, the increase in probability is not significant because of the relatively brief time that this situation will exist. The probability of having a LOCA/LOOP plus an additional failure of a specific safety function, i.e. failure of a valve that isolates LPSW from an LPI cooler, during this particular 72 hour period of time is considered remote.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. As discussed above, the existing Technical Specifications allow operation in this degraded mode for a brief period of time. Extending that time does not affect the possibility of a new or different kind of accident from that which was already considered in the Technical Specification and the FSAR.
3. The proposed change does not involve a significant reduction in a margin of safety. The safety limits and performance criteria of plant systems and equipment are not changed. The parameters that affect LPI system operability are not changed by this requested waiver.

ENVIRONMENTAL CONSEQUENCES

The probability of an accident due to the extended time in this degraded mode of operation would only be slightly increased. The consequences of an accident during this time is reduced due to the low power operation maintained during this extended time. No changes are being made in the types of any effluent that may be released offsite. No irreversible environmental consequences would be involved as a result of this Waiver.

The conclusions and statements contained within this Waiver of Compliance have been reviewed and approved by the Oconee Site Management Team.