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SUBJECT: Forewards response to NRC 880920 request for addl info re application for amend,adding requirements re SSF.

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DUKE POWER

November 28, 1988

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

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

Dear Sir:

By letter dated September 20, 1988 the NRC requested additional information regarding Duke's application to amend Oconee Nuclear Station Technical Specification in order to add requirements concerning the Standby Shutdown Facility (SSF) at Oconee. Accordingly, please find attached Duke's response.

In addition, Duke Power is in the process of adding motor-operators to valves 1,2,3 CCW-268 and 1,2,3 CCW-287 in the SSF Auxiliary Service Water (ASW) system in order to enhance the operators ability to start-up and operate the SSF. In order to implement this modification, it will be necessary to remove from service the SSF ASW system. The current schedule calls for beginning installation of the modification during the Unit 2 refueling outage, currently scheduled to begin on May 19, 1989. In support of this modification, Duke requests that if the Technical Specifications for the SSF are approved and issued by the NRC, these Technical Specification would not become effective until the end of Unit 2 refueling outage. If changes to the above schedule are made, Duke will advise the NRC accordingly. Your cooperation in this issue is greatly appreciated.

Very truly yours

Hal B. Tucker

H.B. Tucker

PFG13.D1/lcs

Attachment

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ATTACHMENT
Duke Power Company
Oconee Nuclear Station

Proposed Technical Specification for SSF
Response to NRC Request for Additional Information

Request 1

The proposed Technical Specification (TS) is not clear regarding the allowable status of the reactors (a) during scheduled and unscheduled SSF system inoperability periods, especially for extended inoperability periods and (b) during inoperabilities of the SSF Reactor Coolant Makeup system corresponding to individual reactors. Provide the appropriate clarifications in sufficient detail, including examples, to facilitate understanding. Provide rationale for any changes to the proposal.

Response 1

Duke's understanding of this question is that the NRC staff would like clarification of how the Proposed Technical Specification 3.18.5 (Special Inoperability) is interpreted by Duke. To provide a clear explanation, the discussion will be broken down to four (4) cases, which should cover all evolutions. The four cases are as follows:

1) Inoperability due to unplanned reasons for seven or fewer days (unplanned inoperability $\leq$ 7 days).

2) Inoperability due to unplanned reasons for more than seven days (unplanned inoperability $\geq$ 7 days).

3) Inoperability due to planned reasons for seven or less days (planned inoperability $\leq$ 7 days).

4) Inoperability due to planned reasons for more than seven days (planned inoperability $\geq$ 7 days).

Before discussing each of the four cases above in detail, some additional points of clarification are appropriate. First, the special inoperability periods provided by proposed Technical Specification 3.18.5 applies to only the SSF ASW pump and motor, The SSF Diesel Generator (DG) and its support system, and the SSF RC makeup pumps and motors. All three of the Oconee units share the SSF ASW system and the SSF DG system, while each Oconee unit has its own SSF RC makeup system. For this discussion, a planned inoperability occurs when the component/system is removed from service to perform a pre-planned activity; such as, but not necessarily limited to, performing preventive maintenance or performing an inservice test. Finally, the definition for an unplanned inoperability is when a component/system is determined not capable of performing its safety function and is removed from service.

Case 1: Unplanned Inoperability ≤ 7 Days

If a system/component is inoperable for unplanned reasons for seven or fewer days, the LCO requirement for that system/component is applicable. For example, if all of the SSF RCS pressure instrumentations were inoperable, all three units would be allowed to operate provided that at least one instrument string is returned to operable status in seven days.

Case 2: Unplanned Inoperability ≥ 7 days

Using the above example (SSF RCS pressure instrumentation), if that instrument string were not returned to operable status within the seven days, then the action statements of Specification 3.18.6 would apply. Specifically, the affected unit(s) would be brought to hot shutdown conditions within 12 hours. Since this instrument is not one of the components identified with this Specification 3.18.5 (special inoperability period), the provisions of that Specification would not be applicable.

If our example had been the SSF ASW pump the following would occur. If the SSF ASW pump were declared inoperable due to unplanned reasons, then for the first seven days the action statement of Specification 3.18.2 applies. All three Oconee units would continue to operate. Following the seven days, if the SSF ASW pump were still inoperable, all three units would be permitted to continue to operate under the provisions of Specification 3.18.5.

Case 3: Planned Inoperability ≤ 7 Days

If a system/component were removed from service to perform a pre-planned activity which is scheduled for seven or fewer days, then the LCO requirement for that system/component would be applicable. For example, if the SSF RC makeup pump were scheduled for a performance test which would take 48 hours, then the pump would be removed from service to perform the test and the affected unit would be allowed to continue to operate under the provision of Specification 3.18.3.

Case 4: Planned inoperability ≥ 7 Days

Utilizing the above example in Case 3, if as a result of the test, the SSF RC makeup pump were determined to be inoperable and after seven days the pump is not returned to service, then under the provision of Specification 3.18.5 the affected unit is permitted to continue to operate.

For the situation when the DG is removed from service to perform preventive maintenance activities and will require twenty-five days to complete, then during the first seven days of the outage the applicable Specification would be 3.18.4. After seven days (i.e., the remaining eighteen days), the applicable Specification would be 3.18.5.

As a further explanation of how Specification 3.18.5 would be interpreted, the following example is provided:

For a given year the following outages of SSF system/components have occurred

1) SSF ASW pump - 25 continuous days
2) SSF ASW pump - 3 continuous days
3) SSF DG - 29 continuous days
4) U1 SSF RC Makeup pump - 11 continuous days
5) U1 SSF RC makeup pump - 5 continuous days
6) U3 SSF RC makeup pump - 15 continuous days
7) SSF DG - 10 continuous days

For outage 1, SSF ASW pump out for 25 continuous days, the following happens: During the first 7 days Specification 3.18.2 applies and during the remaining 18 days Specification 3.18.5 applies. This would mean that 18 days of the 45 day clock would be used up, thus leaving 27 days for the year.

For outage 2, SSF ASW pump out for 3 continuous days, the following happens: Specification 3.18.2 applies, all three Oconee units are allowed to operate under the seven day action statement of Specification 3.18.2. No additional time is deducted from the special inoperability time clock.

For outage 3, SSF DG out for 29 continuous days, the following happens: During the first 7 days Specification 3.18.4 applies and during the remaining 22 days of the outage Specification 3.18.5 applies. This would mean that 22 days of the remaining 27 days left on the special inoperability clock would be used up, thus leaving only 5 days for the year.

For outage 4, U1 SSF RC makeup pump out for 11 continuous days, the following happens: During the first 7 days Specification 3.18.3 would apply and during the remaining 4 days Specification 3.18.5 would apply. This would mean that 4 days of the remaining 5 days for unit 1 would be used up, leaving 1 day for the year for Unit 1, and 5 days for Units 2 and 3.

For outage 5, U1 SSF RC makeup pump out for 5 continuous days, the following happens: Specification 3.18.3 applies and continued operation of U1 is permitted. No additional time is deducted from the special inoperability time clock, thus leaving unit 1 with 1 day left for the year.

For outage 6, U3 SSF RC makeup pump out for 15 continuous days, the following happens: During the first 7 days of the outage Specification 3.18.3 would apply. Unit 3 only has 5 days remaining on the special inoperability clock. This would mean that after 5 days, the U3 SSF RC makeup pump would need to be returned to operable status. If after these 5 days, the U3 RC makeup pump is not restored to operable status, then the action statement of Specification 3.18.3 would apply and unit 3 would need to be at hot shutdown conditions within 12 hours.

For outage 7, SSF DG out for 10 continuous days, the following happens: During the first 7 days of the outage the provision of Specification 3.18.4 would apply and during the remaining 3 days of the outage Specification 3.18.5 would apply. This would mean, for unit 1, which only has 1 day left on the

special inoperability clock, that the unit could operate for 1 day, after which it would need to be at hot shutdown conditions within 36 hours (24 hours for the remaining inoperability time period and 12 hours to get to hot shutdown conditions per Specification 3.18.4). For unit 2, continued operation would be permitted since 5 days remain on the special inoperability clock for unit 2. For unit 3, the unit would have to be at hot shutdown conditions within 12 hours, per Specification 3.18.4, since there is no time left on the unit 3 special inoperability clock (used up during outage 6, U3 SSF RC makeup pump out for 15 continuous days).

Request 2

Describe the degree to which the events for which the safety functions of SSF are intended and the reliability and effectiveness of the SSF, if needed function, are affected by the operability status of the hydroelectric generators and other emergency power sources. Provide the basis and rationale for the above.

Response 2

As discussed in the NRC staff's Safety Evaluation Report (SER) for the SSF, dated April 28, 1983, the SSF is a "bunkered" facility which houses the systems and components necessary to provide an alternate and independent means to achieve and maintain a hot shutdown condition for one or more of the three Oconee units. The SSF was designed to resolve the safe shutdown requirements for fire protection, turbine building flooding and physical security. The SSF has the capability of maintaining hot shutdown conditions in all three units for approximately three days. The operability status of the on-site emergency power source for Oconee (the Keowee Hydroelectric Station) has no effect on the ability of the SSF to perform its intended safety function, as discussed in the April 28, 1983 SER (see Section 2.3, 2.3.1, 2.3.2 and 2.3.3 for detailed discussion of the electrical power supply for the SSF).

Request 3

Provide rationale for not providing compensatory measures in the proposed TS, whereas compensatory measures were provided in the previous TS proposal.

Response 3

Duke Power initial submittal, dated July 26, 1985, did not propose any shutdown requirements for the affected unit(s), only reporting requirements when SSF systems are inoperable. Accordingly, compensatory measures were proposed in lieu of any LCO involving a unit shutdown. However, in the revised submittal dated August 14, 1987 and as supplemented by a August 12, 1988 Duke letter, shutdown requirements for the affected unit(s) were proposed as requested by the NRC in place of compensatory measures. The action statement for when SSF systems are inoperable require that the affected units be shutdown. This is considered to be a compensatory measure in itself.

Request 4

Clarify, with concise rationale, the justification provided for the additional seven (7) day hot shutdown period, which is not provided in the Oconee TS for similar safety systems.

Response 4

The SSF at Oconee is a unique design feature. No other nuclear plants in the United States have such a system. As discussed in response to request 2 above, the intended safety function for the SSF (see April 28, 1985 NRC staff SER) is to provide an alternate and independent means of shutdown for all three Oconee units in order to resolve the regulatory shutdown requirements for fire protection, turbine building flooding and plant security. The SSF will only be used when all normal plant systems that could be used to shutdown the unit are lost due to all encompassing fire or flood or massive destruction caused by a sabator. The SSF offers a further enhancement to overall plant safety (i.e. an additional layer to the defense in depth concept) beyond what current plant safety systems provide. As such, comparisons of Limited Conditions for Operation (LCO) requirements of other Technical Specification systems at Oconee or at other plants to the proposed LCO requirements for the SSF would be inappropriate.

Further, the additional time (seven days) at or below hot shutdown conditions will allow for more time to correct problems before taking the units(s) to cold shutdown conditions, which would result in subjecting the plant to an additional thermal cycle that perhaps would be unnecessary.