Attachment 1

Duke Power Company
Oconee Nuclear Station

Proposed Technical Specification Revision
Standby Shutdown Facility

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3.18 STANDBY SHUTDOWN FACILITY

Applicability

Applies to the Oconee Standby Shutdown Facility (SSF) consisting of the SSF Auxiliary Service Water, SSF RC Makeup systems, associated instrumentation, electrical generation and distribution, support systems, and the interfaces with normal in-plant systems.

Objective

To specify minimum conditions necessary to assure the operability of the Standby Shutdown Facility.

Specification

3.18.1 a. The Oconee Standby Shutdown Facility (SSF) consisting of the SSF Auxiliary Service Water, SSF RC Makeup Systems, associated instrumentation, electrical generation and distribution, support systems, and the interfaces with normal in-plant systems shall be operable at any time an Oconee Unit is in the hot shutdown condition, hot standby, or power operation, except as permitted by Specifications 3.18.2, 3.18.3, 3.18.4, and 3.18.5.

b. The Provisions of specification 3.0 do not apply.

3.18.2 SSF Auxiliary Service Water System

a. The SSF Auxiliary Service Water (SSF ASW) System, consisting of SSF ASW pump and a flow path capable of taking suction from the Unit 2 CCW line and discharging into the secondary side of one steam generator, shall be operable for each Unit in the hot shutdown condition, hot standby, or power operation, except as permitted by part (b).

b. If the SSF ASW system is inoperable, it shall be restored to operable status within 7 days or provide compensatory actions to minimize risk of damage to appropriate plant safety systems, and restore the SSF ASW System to operable status within 60 days, or be in hot standby within the next 12 hours and cold shutdown within the following 48 hours.

3.18.3 SSF Reactor Coolant Makeup System

a. The SSF Reactor Coolant Makeup (SSF RC Makeup) System, consisting of the SSF RC makeup pump, a flow path from the spent fuel pool and discharging into the Reactor Coolant System shall be operable for each unit in the hot shutdown condition, hot standby, or power operation, except as permitted by part (b).

b. If the SSF RC Makeup System is inoperable, it shall be restored to operable status within 7 days or provide compensatory actions to minimize risk of damage to appropriate plant safety systems, and restore the SSF RC Makeup System to operable status within

60 days or be in hot standby within the next 12 hours and cold shutdown within the following 48 hours.

3.18.4 SSF Power System

a. The SSF Power System consisting of the SSF Diesel Generator (SSF DG), diesel support systems, 4160 VAC, 600 VAC, 208 VAC, 120 VAC, 125 VDC systems, shall be operable for any unit in the hot shutdown condition, hot standby, or power operation, except as permitted by part (b).

(1). The SSF DG and support systems consists of the diesel generator, fuel oil transf r system, air start system, diesel engine service water system, as well as associated controls and instrumentation.

(2). The power system consists of 4160V switchgear OTS1; 600V load center OXSF; 600V motor control centers XSF, 1XSF, 2XSF, 3XSF; 208V motor control centers 1XSF, 1XSF-1, 2XSF, 2XSF-1, 3XSF, 3XSF-1; 120V panelboards KSF, KSFC.

(3). The DC power system consists of two batteries and associated chargers, 125VDC distribution centers DCSF, DCSF-1, power panelboard DCSF, and power supplies 1PSF, 2PSF, and 3PSF. Only one battery and associated charger is required to be operable and connected to the 125VDC distribution center.

b. If the SSF Power System is inoperable, it shall be restored to operable status within 7 days or provide compensatory actions to minimize risk of damage to appropriate plant safety systems, and restore the SSF power system to operable status within 60 days or be in hot standby within the next 12 hours and cold shutdown within the following 48 hours.

3.18.5 SSF Associated Instrumentation

a. The associated instrumentation for the SSF, consisting of the instrumentation specified in Table 3.18.1, shall be operable for each unit in the hot shutdown condition, hot standby or power operation, except as permitted by part (b).

b. With less than the minimum SSF instrumentation in Table 3.18.1 operable, it shall be restored to operable status within 7 days or provide compensatory actions to minimize risk of damage to appropriate plant safety systems, and restore the SSF instrumentation to operable status within 60 days or be in hot standby within the next 12 hours and cold shutdown within the following 48 hours.

Bases

The SSF is designed to mitigate the consequences of postulated fire or flooding incidents or acts of industrial sabotage to one or more of the three units at Oconee. The SSF contains, within seismically designed structures a reactor coolant volume control system for maintenance of primary system coolant during hot shutdown conditions; a steam generator volume control system for secondary system heat removal capabilities; independent emergency sources of AC and DC electrical power and associated electrical distribution systems; and various support systems. The SSF is designed to provide an alternate and independent means to achieve and maintain hot shutdown conditions for one or more of the three Oconee units. The SSF is in addition to and supplements the current shutdown capability described in the Oconee FSAR. It would be operated only in the event installed normal and emergency systems are inoperable. Manual operator action is required to actuate the systems.

The compensatory actions established to minimize the risk of damage to appropriate plant safety systems consist of controls to minimize the potential for fire and flood hazards. These compensatory actions shall be reviewed and approved by the appropriate station management prior to implementation.

The SSF Auxiliary Service Water System is a high head, high volume system designed to provide sufficient steam generator inventory for adequate decay heat removal for three units during a loss of normal AC power in conjunction with the loss of the normal and Emergency Feedwater Systems.

The SSF RC Makeup System is designed to supply makeup to the Reactor Coolant System (RCS) in the event that normal makeup systems are unavailable. The capacity of this system is sized to account for normal RCS leakage and shrinkage which results from going from a hot power operating condition to hot shutdown.

The SSF power supply is designed to provide normal and independent emergency sources of AC and DC electrical power, their associated electrical distribution systems and various support systems in the SSF. The SSF diesel generator would be operated only in the event installed normal power systems are inoperable. Manual operator action is required to actuate this system.

The SSF power supply includes 4160VAC, 600VAC, 208VAC, 120VAC and 125VDC power. This system supplies power necessary for the hot shutdown of the reactor in the event of loss of power from all other power systems. It consists of switchgear, a load center, motor control centers, panelboards, remote starters, batteries, battery chargers, inverters, a diesel powered electrical generator unit, relays, control devices, and interconnecting cable supplying the appropriate loads.

The 125VDC SSF Power System consists of two 125VDC batteries and associated chargers, two DC distribution centers, and a DC power panelboard. This system is designed to provide an uninterruptible source of power for the SSF equipment controls and instrumentation.

Normally, one 125VDC battery and its associated charger are connected to the 125VDC distribution center to supply the 125VDC loads. In this alignment, the battery is floated on the distribution center and is available to assume load

without interruption upon loss of its associated battery charger or AC power source. The other 125VDC battery and its associated charger are in a standby mode and are not normally connected to the 125VDC distribution center. However, they are available via manual connection to the 125VDC distribution center to supply SSF loads, if required.

The safe orderly shutdown from Hot Standby to Cold Shutdown of all three units simultaneously will require forty-eight (48) hours.

Table 3.18-1
SSF
Minimum Instrumentation

	Instrument	Readout Location	Minimum Channels Operable
1.	Reactor Coolant System Pressure	SSF Control Panel	1/Unit
2.	Reactor Coolant System Temperature (Tc)	SSF Control Panel	1/Loop/Unit
3.	Pressurizer Water Level	SSF Control Panel	1/Unit
4.	Steam Generator Level (Loop A & B)	SSF Control Panel	1/Steam Generator/Unit
5.	Incore Thermocouple	SSF Control Panel	2/Unit
6.	D/G Air Start System Pressure	SSF D/G Room	1

4.20 STANDBY SHUTDOWN FACILITY

Applicability

Applies to the periodic surveillance testing requirements for the Standby Shutdown Facility (SSF) consisting of the SSF Auxiliary Service Water, SSF RC Makeup Systems, associated instrumentation, electrical generation and distribution, support systems, and the interfaces with normal in-plant systems.

Objective

To verify that the systems and components associated with the SSF are operable.

Specification

4.20.1 SSF Pumps and Valves

a. Inservice testing of SSF ASME Code Class 1, 2 and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable addenda as required by 10 CFR 50, §50.55a(g)(4) to the extent practicable within the limitations of design, geometry and materials of construction of the components.

b. In the event that a pump or valve is determined to be inoperable by the performance of a surveillance test, then actions shall be taken for the affected system as required by Specification 3.18.

4.20.2 SSF Instrumentation

a. The frequency and type of surveillance required for SSF instrumentation shall be as stated in Table 4.20-1.

b. In the event that an instrument is determined to be inoperable by the performance of a surveillance test, then actions shall be taken for the affected system as required by Specification 3.18.

4.20.3 SSF Electrical Power Systems

a. Diesel Generator

1. Monthly, or after maintenance or modification that could affect its operability the SSF diesel generator shall be verified operable by:

a. Verifying the fuel inventory in the day tank is greater than or equal to 200 gallons and,

b. Verifying the fuel inventory in the underground oil storage tank is greater than or equal to 25,000 gallons and,

c. Verifying the diesel starts from standby condition and runs according to the procedures and requirements recommended by the manufacturer.

2. Quarterly verify that:

a. The SSF diesel generator can be operated for at least 60 minutes with a load of greater than or equal to 3000 KW. This test may be preceded by an engine prelube period and/or other warmup procedures recommended by the manufacturer.

b. The fuel oil transfer pump starts and transfers fuel from the storage system to the day tank. This test will be performed per specification 4.20.1.a.

3. Quarterly, diesel fuel from the day tank and the underground storage tank shall be sampled in accordance with ASTM-D270-75, and verified to be within the acceptable limits specified in Table 1 of ASTM D975-77 when checked for viscosity, water and sediment.

4. Annually, the SSF diesel generator shall be demonstrated operable by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service.

5. In the event the SSF diesel generator is determined to be inoperable by the performance of a surveillance test, then actions shall be taken as required by Specification 3.18.

b. DC Power System

Batteries in the SSF shall have the following periodic inspections performed to assure maximum battery life. Any battery or cell not in compliance with these periodic inspection requirements shall be corrected to meet the requirements within 90 days or the battery shall be declared inoperable.

1. Weekly, verify that:

a. The electrolyte level of each pilot cell is in between the minimum and maximum level indication marks.

b. The overall battery float voltage is $\geq$ 125 VDC.

2. Quarterly, verify that:

a. The specific gravity of each corrected to 77°F and full electrolyte level, is $\geq$ 1.200 and is not less than 0.010 below the average of all cells measured.

3. Annually, verify that:

   a. The batteries, end-cell plates and battery racks show no visual indication of structural damage or degradation.

   b. The battery to battery and terminal connections are clean, tight and coated with anti-corrosion material.

4. Annually, a one hour discharge service test at the required maximum load shall be conducted.

5. In the event an SSF battery is declared to be inoperable by the performance of a surveillance test, then actions shall be taken as required by Specification 3.18.

Table 4.20-1
SSF Instrumentation
Surveillance Requirements

	Check	Calibrate	Remarks
1. RCS Pressure (4)	WE	RF	Loop A, B
2. SSF RC Makeup Pump (4)			
Suction Pressure	QU(1)	RF	
Discharge Pressure	QU(1)	RF	
Suction Temperature	QU(1)	RF	
Discharge Flow	QU(1)	RF	
3. RC System Temperature (4)	NA(3)	RF	Loop A, B Hot, Cold
4. Pressurizer Water Level (4)	WE	RF	
5. SSF Auxiliary Service Water Pump			
Suction Pressure	QU(1)	AN	
Discharge Pressure	QU(1)	AN	
Unit 1 Discharge Pressure	NA	AN	
Unit 2 Discharge Pressure	NA	AN	
Unit 3 Discharge Pressure	NA	AN	
Discharge Test Flow	QU(1)	AN	
Suction Temperature	QU(1)	AN	
6. Steam Generator Levels (4)	WE	RF	A, B
7. Underground Fuel Oil Storage Tank Inventory	QU	AN	
8. Incore Thermocouples (4)	WE(2)	RF	
9. D/G Service Water Pump			
Discharge Flow	QU(1)	AN	
Discharge Pressure	QU(1)	AN	
10. D/G Air Start System Pressure	WE	AN	

(1) Check when pump operated/tested per IST.
(2) Check functioning including functioning of readout recorder.
(3) This instrumentation is normally aligned through a transfer/isolation device to each Unit Control Room and is thus checked in accordance with Specification 4.1, Table 4.1-1, Item 7. Each refueling outage, the instrument string to the SSF Control Room will be checked and calibrated.
(4) Units 1, 2, 3

Bases

Surveillance requirements contained in this specification are provided to assure the SSF would be capable of performing its design function if demanded, and are consistent with the surveillance requirements for other equipment contained in Technical Specifications. All inservice testing of pumps and valves will be done in accordance with the provisions of ASME Section XI, Subsections IWP and IWV.

The surveillance requirements for the SSF Instrumentation are based on experience in operation of both conventional and nuclear systems. The minimum checking frequency stated is deemed adequate for SSF Instrumentation. Calibration is performed to assure the presentation and acquisition of accurate information. Process system instrumentation errors induced by drift can be expected to remain within acceptable tolerances if recalibration is performed at the intervals specified.

The testing of the SSF electrical power systems are based upon a review of the surveillance requirements of other similar type of equipment contained within the technical specifications, manufacturer recommendations, and appropriate NRC guidelines.

ADDITIONAL REQUIREMENTS

1. One licensed operator per unit shall be in the Control Room at all times when there is fuel in the reactor vessel.

2. Two licensed operators shall be in the Control Room during startup and scheduled shutdown of a reactor.

3. At least one licensed operator shall be in the reactor building when fuel handling operations in the reactor building are in progress.

4. An operator holding a Senior Reactor Operator license and assigned no other operational duties shall be in direct charge of refueling operations.

5. At least one person per shift shall have sufficient training to perform routine health physics requirements.

6. If the computer for a reactor is inoperable for more than eight hours, an operator, in addition to those required in (1) and (2) above, shall supplement the Control Room shift crew.

7. A fire brigade of 5 members shall be maintained on site at all times. This excludes 3 members of the minimum operating shift requirements that are required to be present in the Control Rooms.

8. An operator holding a Senior Reactor Operator's license shall be in the Control Room from which the unit is operated whenever the unit is above cold shutdown.

9. Temporary deviations from the requirements of Table 6.1-1 may be allowed in cases of sudden illness, injury or other similar emergencies provided replacement personnel are notifed immediately and are on site as soon as possible to return shift manning to minimum.

10. The qualified manpower necessary for achieving alternate shutdown using the SSF will be available at the plant at all times. The manpower to operate the SSF will be exclusive of the minimum manpower requirements for the fire brigade.

Attachment 2

Duke Power Company
Oconee Nuclear Station

Proposed Technical Specification Revision
Standby Shutdown Facility
Discussion of Proposed Changes

The SSF is an alternate means to provide the capability to maintain each Oconee unit at hot shutdown. It is a facility which would mitigate the effects of postulated fires within certain fire areas. In addition, the facility provides the means in which the safe shutdown requirements for turbine building flooding and physical security are resolved. It provides protection beyond that which is provided by the existing fire protection systems which are included in Specifications 3.17 and 4.19 of the Oconee Technical Specifications.

The proposed Technical Specification revisions which would govern the operation and surveillance of the Oconee Standby Shutdown Facility (SSF) have been developed from reviews of existing Technical Specifications, and discussions with the NRC Staff. Because of the number of systems in the SSF and its relative importance, a specific limiting condition of operation (LCO) specification (3.18) and a specific surveillance specification (4.20) have been developed rather than trying to incorporate individual systems into existing specifications.

Specification 3.18 provides the LCO for the SSF. The systems of the SSF necessary to assure its operability, namely the SSF Auxiliary Service Water, SFF RC Makeup, associated instrumentation, electrical generation and distribution are included. Specification 3.18.1 requires that these systems be operable for each Unit in the hot shutdown, hot standby, or power operation. Specification 3.18.2 addresses the SSF ASW system, covering planned test or maintenance, restoration to operable status if inoperable. In a similar manner, Specifications 3.18.3, 3.18.4, and 3.18.5 cover the SSF RC Makeup, the SSF Power System and associated SSF Instrumentation, respectively.

Specification 4.20 provides the surveillance requirements for the SSF. Pumps, valves, instrumentation, and electrical power systems are included. The pumps and valves required for the SSF systems to function are included in the pump and valve test program which is maintained in accordance with ASME Section XI. SSF instrumentation is both checked and calibrated on frequencies contained in Table 4.20-1. The periodic surveillance is frequent enough to provide assurrance that the instrumentation is properly functioning. Calibrations are conducted on either an annual or refueling outage interval depending on location of the device and whether or not it's accessible during operation. Specification 4.20.3 covers operability of the SSF diesel generator and SSF DC power system. The diesel specification was developed from existing standards for diesel generator surveillance as applied to this specific case. The specification for the DC power system is modeled after the existing Oconee battery specification (4.6.9).

Finally, Specification 6.1 is revised to included the manpower requirements for the operation of the SSF.

Attachment 3

Duke Power Company
Oconee Nuclear Station

Proposed Technical Specification Revision
Standby Shutdown Facility
No Significant Hazards Determination

No Significant Hazards Evaluation

Duke Power has made the determination that this amendment request involves no significant hazards under the Commission's regulations in 10 CFR 50.92. This ensures that operation of the facility in accordance with the proposed amendment would not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or

2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or

3) Involve a significant reduction in a margin of safety.

Guidance has been supplied by the Commission concerning the application of these standards by providing certain examples (48 FR 14870). Example (ii) of the types of amendments not likely to involve significant hazards considerations applies in this case as this amendment constitutes an additional limitation, restriction or control not presently included in the Technical Specifications.

The Oconee Standby Shutdown Facility (SSF) was designed to resolve the safe shutdown requirements for fire protection, turbine building flooding, and physical security requirements. The NRC has reviewed the design and provided the results of this review in a letter dated April 28, 1983. This proposed license amendment is being submitted by Duke in response to the Staff request contained in the April 28, 1983 letter.

This proposed license amendment constitutes additional limitations not presently included in the Technical Specifications to control the operation and maintenance of the SSF. It is not considered to involve a significant hazards consideration. Specific evaluations to the three criteria follow.

1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

   This proposed license amendment will reduce the probability of a fire, turbine building flood, or security incident causing an accident. The SSF provides an additional level of protection to assure that any Oconee unit can remain in a hot shutdown condition following an accident that causes existing plant systems to be inoperable. This proposed license amendment governs operability of the SSF to provide assurrance that it is capable of performing its design functions if called upon.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

   This proposed license amendment governs the operation and maintenance of the SSF, whose design has been previously accepted by the NRC. The possibility of a new or different kind of accident is not created by this proposed license amendment.

3) Involve a significant reduction in a margin of safety.

This proposed license amendment will improve the margin of safety in that the SSF provides an additional level of protection for fire, turbine building flood, and security events. The proposed license amendment provides requirements which govern the operation and maintenance of the SSF.

In view of the preceding, this proposed license amendment is not considered to involve a significant hazards consideration.