3/4.7.14 STANDBY SHUTDOWN SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.14 The Standby Shutdown System (SSS) shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.

ACTION:

a. With the Standby Shutdown System inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 30 days outlining the cause of the inoperability, corrective actions being taken, and plans for restoring the system to OPERABLE status; and

b. With one or more SSS components inoperable, as determined by the performance of surveillance requirements of Specification 4.7.14, within 1 hour verify the OPERABILITY of fire detection and suppression systems (if installed) in areas as identified in Table 4.7-2 and, as appropriate, perform the actions identified in notes 3 and 4 of the table.

c. With the total leakage from UNIDENTIFIED LEAKAGE, IDENTIFIED LEAKAGE and reactor coolant pump seal leakoff greater than 26 gpm, declare the Standby Makeup Pump inoperable and take ACTIONS a. and b., above.

d. If equipment which constitutes inoperable component of SSS is located inside containment, then repairs shall be effected at the first outage which permits containment access.

e. If the diesel generator is inoperable, repairs shall be effected within 60 days, or a report shall be prepared within the next 14 days which: 1) details the extent of repairs required, 2) outlines the schedule for completion of those repairs, and 3) provides a basis for continued operation.

f. The provisions of Specifications 3.0.3 and 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.7.14.1 The Standby Shutdown System diesel generator shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying:

1) The fuel level in the fuel storage tank is greater than or equal to 4.0 feet, and

2) The diesel starts from ambient conditions and operates for at least 30 minutes at greater than or equal to 700 kW.

b. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:

1) By verifying in accordance with the tests specified in ASTM D975-81 prior to addition to the storage tanks that the sample has:

a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.

b) A kinematic viscosity at 40°C of greater than or equal to 1.9 centistokes but less than or equal to 4.1 centistokes (on a Saybolt Universal Viscosity at 100°F of greater than or equal to 32.6 SUS but less than or equal to 40.1 SUS).

c) A flash point equal to or greater than 125°F, and

d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.

2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.

c. At least once per 18 months by subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

4.7.14.2 The Standby Shutdown System diesel starting 24-volt Nickel-Cadmium battery bank and charger shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that the overall battery voltage is greater than or equal to 24 volts.

b. At least once per 18 months by verifying that:

1) The batteries and battery racks show no visual indication of physical damage or abnormal deterioration, and

2) The battery-to-battery and terminal connections are clean, tight, and free of corrosion.

4.7.14.3 The Standby Makeup Pump water supply shall be demonstrated OPERABLE by:

a. Verifying at least once per 72 hours that IDENTIFIED LEAKAGE, UNIDENTIFIED LEAKAGE, and Reactor Coolant Pump Seal leakoff do not exceed a total of 26 gpm.

b. Verifying at least once per 7 days:

1) That the requirements of Specification 3.9.10 are met and the boron concentration in the storage pool is greater than or equal to 2000 ppm, or

2) That the refueling water storage tank is capable of being aligned to the Standby Makeup Pump.

c. Verifying at least once per 92 days that the Standby Makeup Pump develops a flow of greater than or equal to 26 gpm at a pressure greater than or equal to 2485 psig.

4.7.14.4 The Standby Shutdown System 250/125-Volt Battery Bank and its associated charger shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying:

1) That the electrolyte level of each battery is above the plates, and

2) The total battery terminal voltage is greater than or equal to 258/129 volts on float charge.

b. At least once per 92 days by verifying that the average specific gravity is greater than or equal to 1.200.

c. At least once per 18 months by verifying that:

1) The batteries, cell plates, and battery racks show no visual indications of physical damage or abnormal deterioration, and

2) The battery-to-battery and terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

4.7.14.5 The Steam Turbine Driven Auxiliary Feedwater Pump and associated components shall be demonstrated OPERABLE at least once

per 18 months by verifying that the "C" solenoid is capable of being deenergized to open valve SA48ABC to provide steam supply to the turbine driven auxiliary feedwater pump.

4.7.14.6 Standby Shutdown System instrumentation shall be demonstrated OPERABLE by performance of surveillance requirements listed in Table 4.7-3.

TABLE 4.7-3

Instrument	CHANNEL CHECK	CHANNEL CALIBRATION	READOUT LOCATION	MINIMUM CHANNELS OPERABLE
Reactor Coolant Pressure	M	R	SSF Control Panel	1
Pressurizer Level	M	R	SSF Control Panel	1
Steam Generator Level	M	R	SSF Control Panel	1/S.G.
Incore Temperature	M	R	SSF Control Panel	1
Standby Makeup Pump Flow	N/A	R	SSF Control Panel	1

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TABLE 4.7-2

Standby Shutdown System Component ACTION Statements

With one or more of the following SSS components inoperable	Verify operability[1] of fire detectors and suppression systems (if installed) in the following areas:									
	EL 716 EE-KK	EL 733 EE-KK	EL 750 EE-KK	Control Room	Battery Room	Cable Rooms	Turbine Driven AFW Pump	Motor Driven AFW Pump	Containment	Other Actions
A. Diesel Generator	X	X	X	X	X	X	X	X	(2)	(3),(4)
B. Diesel starting 24-Volt battery bank and charger	X	X	X	X	X	X	X	X	(2)	(3),(4)
C. Standby makeup pump and water supply	X	X	X							
D. 250/125 V battery bank and associated charger				X	X	X			(2)	(4)
E. Steam Turbine Driven Auxiliary Feedwater Pump Solenoid "C"								X		
F. Instrumentation										
Reactor Coolant Pressure				X	X	X			(2)	
Pressurizer Level				X	X	X			(2)	
Steam Generator Level				X	X	X			(2)	
Incore Temperature				X	X	X			(2)	

NOTES: (1) If fire detection and/or suppression systems are inoperable, then the ACTION statement(s) of the applicable fire detection and/or suppression technical specification(s) shall be complied with.
(2) Monitor containment air temperature at least once per hour at the locations specified in Specification 4.6.1.5.1 or 4.6.1.5.2, in lieu of verification of operability of systems inside containment.
(3) With this component inoperable, verify operability of off-site power and one blackout diesel generator.
(4) With this component inoperable, then denoted areas of both units are affected.

ATTACHMENT II

A. Technical Justification

The Standby Shutdown System (SSS) provides an additional degree of redundancy to the multiple systems which are available, under emergency conditions, to achieve and maintain the reactor in the Hot Standby Mode. The surveillance requirements and action statements presented in the Draft Technical Specification are reasonable considering the safety significance of a potential inoperability of this redundant system. By design, the SSS is intended to respond to those low-probability fire and/or sabotage events which render both the control room and automatic safety systems inoperable. Because of the low probability of occurrence of these events, the action statements in the proposed specification rely on compensatory action, timely repair or return to operability and, if necessary, a justification for continued operation.

Because the SSS performs a redundant fire protection function, compensatory action relies largely on assurance of the operability of fire detection and suppression systems. Table 4.7.2 of the proposed specification establishes requirements for operability of fire detection and suppression systems.

The surveillance requirements presented in Attachment I are intended to provide assurance that the various components of the Standby Shutdown System (SSS) perform their functions. The surveillance requirements are based largely on existing SSS Technical Specification for the Catawba Nuclear Station, which was approved prior to the issuance of the fuel load license for Unit 1 of that plant. Also considered in the formulation of the surveillance requirements were existing McGuire Technical Specifications, such as those for the 1E Diesel Generators, Refueling Water Storage Tank, Fire Protection & Detection Systems, and other Tech Specs which are related to the safe operation and/or shutdown of the plant. Following is an item-by-item justification of the proposed Technical Specification.

3.7.14 - Action Statements

The SSS Technical Specification for Catawba requires that with the SSS inoperable, restore the inoperable equipment to operable status within 7 days or be in at least hot standby in the next 6 hours.

Considering that the SSS is a third line of defense for a low-probability fire event, it is not reasonable to require a plant shutdown for those occasions when a component of the system is inoperable. For example, specification 4.7.14.1.C requires that every 18 months, the diesel generator be subjected to an inspection which involves a substantial disassembly. It is not reasonable to expect that this inspection can be performed within 7 days. Therefore, at a multi-unit plant such as McGuire, both units would have to be shut down every 18 months for an extended outage, presumably in addition to at least one unit's refueling outage.

ACTION STATEMENT C , Regarding total allowed leakage, is virtually the same as Catawba's. The quantities of identified and unidentified leakage allowed are governed by specification 3.4.6.2, "Operational Leakage." The allowance for Reactor Coolant Pump Seal Leakoff (15 GPM) is a conservative amount which is almost (3.75 GPM/Pump vs. 4.3) equal to the degraded seal performance value used as the design basis. The .55 GPM/Pump difference is not a safety concern.

ACTION STATEMENT D, Recognizes that equipment inside containment is inaccessible during operation. As noted previously, it is not reasonable to require a shutdown to repair an inoperable component of the SSS. However, any inoperable equipment will be repaired at the first available opportunity (i.e., Planned or forced outage.)

ACTION STATEMENT E, Provides an adequate length of time to repair or inspect the diesel generator. During this time, at least one emergency diesel and offsite power will be operable.

The verification of operability of fire detection and suppression systems in the locations specified in Table 4.7.2 will provide adequate assurance that those systems for which the SSS provides a backup will not be damaged by fire.

4.7.14 - Surveillance Requirements

4.7.14.1

a.

1) A fuel level of 4.0 feet in the fuel storage tank is sufficient to operate the diesel for at least 48 hours. It is assumed that, within 48 hours, offsite power can be restored or additional fuel can be added to the storage tank.

2) This specification is identical to the requirement for Catawba. This requirement is loosely based on Specification 4.8.1.1.2a.4 (1E Diesels), but considers that the SSF Diesels are manual start only, and not subject to a test frequency based on successful starts.

b. Requirements for new fuel being added to the tank are virtually identical to those of the 1E Diesels.

c. Manufacturer-recommended 18-month inspection requirement is similar to that for 1E Diesels, except that in view of the redundant nature of the SSS function, plant shutdown is not required.

4.7.14.2

Surveillance requirements for SSS diesel starting batteries are similar to those for 1E Diesels, but reflect the fact that the batteries are nickel-cadmium and, therefore, criteria for specific gravity and eletrolyte level are not applicable.

4.7.14.3

a. The specification to verify operability of the Standby Makeup Pump water supply is based on the Catawba specification, except that the alternate water supply of 112,320 gallons has been replaced by the Refueling Water Storage Tank (RWST). The RWST is verified weekly (per T/S. 3/4.5.5) to contain at least 372,100 gallons of water borated to a concentration between 2,000 and 2,100 PPM.

b. As noted previously, the flow rate of 26 GPM is based upon the total of allowed leakage (Identified and unidentified) and reactor coolant pump seal leakoff. The required pressure is equal to the pressurizer safety set point of 2485 psig. According to the pump manufacturer, the pump can deliver 26 GPM at 2735 psig.

4.7.14.4

The specifications for surveillance of 250/125 Volt Battery Bank are based on those for the 1E Diesel batteries, although the surveillance is performed less frequently. This relaxed frequency is consistent with the probability that the batteries will be required.

4.7.14.5

The Steam Turbine Auxiliary Feedwater pump is determined operable per Tech Spec 4.7.1.2a. Specification 4.7.14.5 assures that a source of steam is available through valve SA48ABC, which fails open on deenergization of the "C" solenoid.

4.7.14.6

The instrumentation surveillance requirements are consistent with specifications 3.3.3.5 and 3.3.3.6.

B. Significant Hazards Considerations Analysis

This analysis is provided to determine whether the proposed amendment involves a significant hazards consideration, as defined by 10CFR50.92.

The proposed Technical Specification will not increase the probability of an accident occurring, either one previously evaluated or not, because the SSS is used to mitigate events which are already in progress, and because the equipment upon which surveillance is performed is not directly associated with equipment whose failure would cause an accident.

Inoperability of the SSS could reduce the capability to mitigate the consequences of an event which disables the normal and emergency shutdown systems, and renders the control room uninhabitable. Therefore, controls on the inoperability of the SSS, and formalized surveillance procedures, are expected to contribute to a net decrease in potential probability of an accident.

The Federal Register Notice which published the interim final rule contained examples of amendments that are not likely to involve significant hazards considerations. One example was a change that constitutes additional limitations, restrictions, or controls not presently included in the Technical Specifications.

The proposed Technical Specification does not reduce or affect any margin of safety, except as noted above with respect to a potential decrease in consequences to the public.

Based on the above, Duke Power Company concludes that the proposed amendment does not involve a significant hazards consideration.