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SLC 16.5-1	NA	001 10/24/06																	
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J R MORRIS
VICE PRESIDENT
CATAWBA NUCLEAR STATION

BY:

D ROME CN01VP DR/RBE

A053

DUKE ENERGY CORPORATION
Catawba Nuclear Station
4800 Concord Road
York, SC 29745

803 831 3000

November 21, 2006

Re: Catawba Nuclear Station
Selected Licensee Commitments Manual
Revision Date 10/24/2006

Attached are revisions to the Catawba Nuclear Station Selected Licensee Commitments Manual. Please remove and replace the following pages:

REMOVE THESE PAGES	INSERT THESE PAGES
LIST OF EFFECTIVE SECTIONS	
Pages 1 through 4 Revision 29	Pages 1 through 4 Revision 30
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16.10-2-1 through 16.10-2-2 Revision 0	16.10-2-1 through 16.10-2-2 Revision 1

If you have any questions concerning the contents of this package update, contact Debbie Rome at (803)831-3067.

Randy Hart
Manager, Regulatory Compliance

Attachment

LIST OF EFFECTIVE SECTIONS

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16.5 REACTOR COOLANT SYSTEM

16.5-1 Reduced Inventory and Mid-Loop Operation with Irradiated Fuel in the Core

COMMITMENT

Two independent trains of reactor coolant system level instruments are required. These instruments shall have independent transmitters and shall not include the reactor coolant system sightglass (NCLG-6450) or tygon tubing.

AND

----------NOTES----------

1. **Final disconnection of the last two core exit thermocouples shall occur no sooner than 2 hours prior to reactor vessel head removal.**

2. Reconnection of at least two thermocouples shall occur within 2 hours after reinstalling the reactor vessel head.

3. The total time without thermocouple indication shall not exceed 12 hours.

Whenever the reactor vessel head is installed, two core exit thermocouples shall be maintained operating with temporary high alarms set at 140°F and monitored.

AND

Four power sources shall be available, two offsite sources and two diesel generators.

AND

Two independent makeup paths of borated water shall be available, consisting of:

One centrifugal charging pump or one safety injection pump as required per SLC 16.9-7 and 16.9-9.

AND

One additional centrifugal charging pump or safety injection pump on the opposite train of the first required makeup path.

AND

(continued)

COMMITMENT (continued)

----------NOTE----------
The number of open containment penetrations shall be limited such that the penetrations can be closed prior to the onset of core boiling upon loss of residual heat removal.

Containment closure shall be established. Containment closure is verified by the performance of PT/1/(2)/A/4200/002C&I, Containment Closure Verification, with penetrations not verified acceptable, administratively controlled per OP/0/A/6100/014, Penetration Control For Modes 5 and 6.

AND

The reactor has been subcritical for at least 7 days or Engineering has provided a required subcritical time based on plant operating history and actual reduced reactor coolant system level.

AND

Operation in a mid-loop condition shall only occur during low decay heat conditions (after refueling).

APPLICABILITY: Whenever irradiated fuel is in the reactor vessel and reactor coolant system wide range level is $\leq$ 16%.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more COMMITMENT(S) not met.	A.1 Initiate action to restore compliance with COMMITMENT(S).	Immediately
	AND	
	A.2 Contact station management for additional guidance.	Immediately
B. Primary method of monitoring core exit thermocouples unavailable.	B.1 Monitor and record thermocouple temperatures on the Incore Instrument Panel.	Once per 15 minutes

TESTING REQUIREMENTS None

BASES

Generic Letter 88-17 and NUREG-1410 involve concerns associated with a loss of residual heat removal. Numerous events have occurred in the industry that resulted in a loss of residual heat removal during reduced inventory operation. This is of great concern due to the potential for substantial core damage occurring in a relatively short time period.

This Selected Licensee Commitment depicts those commitments which are extremely important to nuclear safety, however, are not presently covered by Technical Specifications.

The basis for the requirement for the reactor to be subcritical for 7 days is to ensure 2.5 hours until the core is uncovered following a loss of decay heat removal when at mid-loop operation (Refs. 10, 11).

REFERENCES

1. Generic Letter 88-17, "Loss of Decay Heat Removal."

2. NUREG-1410, "Loss of Vital AC Power and Residual Heat Removal during Mid-Loop Operation at Vogtle."

3. Catawba Nuclear Station Directive 3.1.30, "Unit Shutdown Configuration Control (Mode 5, 6 and No Mode)."

REFERENCES (continued)

4. OP/1(2)/A/6150/06, "Draining the Reactor Coolant System."

5. Catawba Nuclear Station Technical Specifications.

6. Catawba Design Basis Specification for the Reactor Coolant (NC) System.

7. Oconee Nuclear Station Selected Licensee Commitment 16.5.3.

8. Work Processes Manual, Sections 602, "Outage Management," and 603, "Unit Trip Forced Outage Management."

9. Catawba Nuclear Station responses to Generic Letter 88-17 dated January 3, 1989.

10. Design Study CNDS-0242, "Catawba and McGuire Nuclear Stations, Shutdown by Decay Heat Level Before Mid-Loop Operation."

11. DPC-1552-08-00-0023, "Loss of Decay Heat Removal (G.L. 88-17)."

16.5 REACTOR COOLANT SYSTEM

16.5-9 Operation with Irradiated Fuel in the Core with Steam Generator (SG) Nozzle Dams Installed or Cold Leg Opening $\geq$ 1 in^2

COMMITMENT **The Reactor Coolant System (RCS) shall be properly vented when SG nozzle dams are in use or the RCS cold leg is open $\geq$ 1 in^2.**

APPLICABILITY: Whenever irradiated fuel is in the reactor vessel.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. COMMITMENT(S) not met.	A.1 Initiate action to restore compliance with COMMITMENT(S).	Immediately

TESTING REQUIREMENTS None

BASES

Generic Letter 88-17 and NUREG-1410 involve concerns associated with a loss of residual heat removal. Numerous events have occurred in the industry that resulted in a loss of residual heat removal. This is of great concern due to the potential for substantial core damage occurring in a relatively short time period.

The vent path is provided to address Expeditious Action (7) of Generic Letter 88-17. The vent path is provided to assure that the nozzle dams are not dislodged due to pressurization that could result on a loss of decay heat removal event resulting in core boiling. In addition, in the absence of a sufficient vent path, pressurization in combination with cold leg openings could allow water to be ejected from the vessel and lead to core uncovery.

This Selected Licensee Commitment depicts those commitments which are extremely important to nuclear safety, however, are not presently covered by Technical Specifications.

The vent path may be satisfied by:

BASES (continued)

1. On the vented loop, no hot leg nozzle dam installed

   AND

   Removal of either of the following:

   a. A hot leg diaphragm and manway

   OR

   b. A cold leg diaphragm and manway

OR

2. Reactor vessel head is removed.

REFERENCES

1. Generic Letter 88-17, "Loss of Decay Heat Removal."

2. NUREG-1410, "Loss of Vital AC Power and Residual Heat Removal during Mid-Loop Operation at Vogtle."

3. Catawba Nuclear Station Directive 3.1.30, "Unit Shutdown Configuration Control (Mode 5, 6 and No Mode)."

4. Catawba Design Basis Specification for the Reactor Coolant (NC) System.

5. Catawba Nuclear Station responses to Generic Letter 88-17, dated January 3, 1989 and February 2, 1989.

6. DPC-1552.08-00-0017, "Analysis of Potential NC System Vent Paths During Nozzle Seal Dam Installation and Use."

7. NUREG-1449, "Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States."

8. NRC letter to Hal Tucker, "Comments on Expeditious Action and Notice of Audit on Generic Letter 88-17, McGuire and Catawba Nuclear Stations, Units 1 and 2," dated May 17, 1989.

16.8 ELECTRICAL POWER SYSTEMS

16.8-2 230 kV Switchyard Systems

COMMITMENT The following switchyard equipment shall be in its normal alignment:

a. Switchyard Unit 1 PCBs 14, 15, 17, and 18 including their associated manual disconnects, current transformers, interconnecting bus, and support structures (EBA system),

b. Switchyard Unit 2 PCBs 20, 21, 23, and 24 including their associated manual disconnects, current transformers, interconnecting bus, and support structures (EBA system),

c. Buslines 1A, 1B (from main stepup transformers to switchyard unit PCBs), including their associated motor operated disconnects, coupling capacitor voltage transformers, interconnecting bus, and support structures (EBA system),

d. Buslines 2A, 2B (from main stepup transformers to switchyard unit PCBs), including their associated motor operated disconnects, coupling capacitor voltage transformers, interconnecting bus, and support structures (EBA system),

e. Controls associated with the equipment above (EBE, ERE systems),

f. Protective relaying associated with the equipment above (EBD, ERD systems),

g. 480 VAC auxiliary power load centers STA for both units' Train A, STB for both units' Train B (EBI system), and

h. 125 VDC auxiliary power (EBH system) per SLC 16.8-3.

APPLICABILITY: At all times in accordance with Technical Specifications (all MODES) and Site Directive 3.1.30 (MODES 4, 5, and 6).

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Switchyard equipment not in normal COMMITMENT alignment.	A.1 Return switchyard equipment to normal COMMITMENT alignment.	In accordance with the Electronic Risk Assessment Tool

TESTING REQUIREMENTS None

BASES

Effective implementation of the Maintenance Rule, 10 CFR 50.65, requires the continuous assessment of systems determined to be risk significant in the protection against core damage or radiation release. It has been determined through probabilistic risk assessment (PRA) numerical methods that switchyard systems are risk significant from the standpoint of causing or being able to recover from Loss of Offsite Power events. This SLC serves two purposes. It defines the risk significant portions of the switchyard. It also provides a method of tracking the switchyard systems for the purposes of supporting 10 CFR 50.65.

REFERENCES

1. 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.

2. Deleted.

3. Deleted.

4. CNC-1535.00-00-0008, Severe Accident Analysis Report, CNS PRA Risk Significant SSCs for the Maintenance Rule.

5. CNS-010.01-EB-0001, Switchyard Design Basis Specification.

6. Technical Specification sections 3.8.1 and 3.8.2, LCOs for AC Power Sources during Operating and Shutdown MODES.

7. Site Directive 3.1.30, Unit Shutdown Configuration Control.

16.8 ELECTRICAL POWER SYSTEMS

16.8-3 230 kV Switchyard 125 VDC Power System

COMMITMENT **With the switchyard in service, providing a power exchange between the site and the transmission grid, the 230 kV Switchyard 125 VDC Power System (EBH) shall be available, with a minimum of one battery (SYB-1 or SYB-2) and one charger (SYBC-1, SYBC-S, or SYBC-2) aligned to each distribution bus.**

APPLICABILITY: At all times.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. COMMITMENT alignment not met.	A.1 Restore normal COMMITMENT alignment.	In accordance with the Electronic Risk Assessment Tool

TESTING REQUIREMENTS

TEST		FREQUENCY
TR 16.8-3-1	Perform periodic testing in accordance with IEEE Standard 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."	In accordance with IEEE Standard 450-1980

BASES The effective implementation of the Maintenance Rule, 10 CFR 50.65, requires the continuous assessment of systems determined to be risk significant in the protection against core damage or radiation release. It has been determined through probabilistic risk assessment (PRA) numerical methods that portions of the switchyard systems are risk significant from the standpoint of being able to recover from the Loss of Offsite Power events. This SLC serves two purposes. It defines the risk significant portion of the relaying and power control system of the switchyard through acceptable EBH system configuration alignments. These alignments provide an adequate, uninterruptable power source for relaying, control, and associated equipment requirements for normal switchyard operations. It also provides a

BASES (continued)

method of tracking the relaying and power control system for the purposes of supporting 10 CFR 50.65.

REFERENCES

1. IEEE Standard 450-1980, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."

2. Deleted.

3. Deleted.

4. 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.

5. SAAG File: 160 Severe Accident Analysis Report, CNS Probability Risk Assessment (PRA) Risk Significant SSCs for the Maintenance Rule.

16.8 ELECTRICAL POWER SYSTEMS

16.8-4 6900 V Shared Transformers

COMMITMENT

The 6900 V shared transformers (SATA and SATB) shall be available to be energized by the appropriate power source at all times of maintenance in which the indicated equipment is tagged and isolated. During the activities listed below (or their equivalent effects), the supply power source shall be available, as directed:

Power Source/ Maintenance Activity	SATA from breaker 1TC4	SATB from breaker 1TB4	SATA from breaker 2TC4	SATB from breaker 2TB4
Unit 1 Zone A Main Power			X	
Unit 1 Zone B Main Power				X
Diesel Generator 1A			X	
Diesel Generator 1B				X
Unit 2 Zone A Main Power	X			
Unit 2 Zone B Main Power		X		
Diesel Generator 2A	X			
Diesel Generator 2B		X		

APPLICABILITY: At all times.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Required power source unavailable.	A.1 Restore power source to shared transformers to available status.	In accordance with the Electronic Risk Assessment Tool

TESTING REQUIREMENTS None

BASES

Effective implementation of the Maintenance Rule, 10 CFR 50.65, requires the continuous assessment of systems determined to be risk significant in the protection against core damage or radiation release. It has been determined through probabilistic risk assessment (PRA) numerical methods that the 6900 V shared transformers (SATA and

BASES (continued)

SATB) are risk significant from the standpoint of being able to recover from the Loss of Offsite Power events. This SLC provides a method of tracking the availability of the shared transformers for the purpose of supporting 10 CFR 50.65.

REFERENCES

1. Maintenance Rule, 10 CFR 50.65.

16.9 AUXILIARY SYSTEMS

16.9-6 Fire Detection Instrumentation

COMMITMENT The Fire Detection Instrumentation for each fire detection zone shown in Table 16.9-6-1 shall be OPERABLE.

APPLICABILITY: Whenever equipment protected by the fire detection instrument is required to be OPERABLE or is in service.

REMEDIAL ACTIONS

CONDITION		REQUIRED ACTION		COMPLETION TIME
A.	All fire detection instruments in all fire zones inoperable due to fire detection system failure.	A.1	Establish roving fire watch in accordance with fire detection system operating procedure.	1 hour
		AND		
		A.2	Restore the inoperable fire detection system to OPERABLE status.	72 hours
B.	One or more of the fire detection instruments in any fire zone inoperable. OR Required Action and associated Completion Time of Condition A not met.	B.1	Establish a fire watch patrol in accordance with fire watch requirements in Table 16.9-6-1 for the affected instruments or zones.	1 hour

TESTING REQUIREMENTS

	TEST	FREQUENCY
TR 16.9-6-1	Verify the NFPA Standard 72D supervised circuits supervision associated with the detector alarms is OPERABLE.	6 months
TR 16.9-6-2	Perform a visual inspection of each flame detection instrument.	6 months
TR 16.9-6-3	Perform a visual inspection of each smoke detection instrument accessible during plant operation.	6 months
TR 16.9-6-4	Perform a functional test of each restorable line type heat detection instrument by applying a heat source.	6 months
TR 16.9-6-5	Perform a functional test of each flame detection instrument.	12 months
TR 16.9-6-6	Perform a functional test of each smoke detection instrument accessible during plant operation.	12 months
TR 16.9-6-7	Perform a non-destructive functional test of each non-restorable line type heat detection instrument accessible during plant operation.	12 months
TR 16.9-6-8	Perform a functional test of each smoke detection instrument not accessible during plant operation.	18 months
TR 16.9-6-9	Perform a non-destructive functional test of each non-restorable line type heat detection instrument not accessible during plant operation.	18 months

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
1	ND Pump 1B	GG-53	522 + 0	1	0	0	Hourly
2	ND Pump 1A	FF-53	522 + 0	1	0	0	Hourly
3	NS Pump 1B	GG-54	522 + 0	3	0	0	Hourly
4	NS Pump 1A	GG-55	522 + 0	2	0	0	Hourly
5	ND Pump 2B	GG-61	522 + 0	1	0	0	Hourly
6	ND Pump 2A	FF-61	522 + 0	1	0	0	Hourly
7	NS Pump 2B	GG-60	522 + 0	3	0	0	Hourly
8	NS Pump 2A	GG-59	522 + 0	2	0	0	Hourly
9	CA Pumps (Unit 1)	BB-51	543 + 0	14	0	0	Continuous
10	Mech Pen Room	JJ-52	543 + 0	3	0	0	Hourly
11	Corridor/Cables	NN-51	543 + 0	6	0	0	Hourly
12	NV Pump #1 (Unit 1)	JJ-53	543 + 0	1	0	0	Hourly
13	NI Pump 1B	HH-53	543 + 0	1	0	0	Hourly
14	NI Pump 1A	GG-53	543 + 0	1	0	0	Hourly
15	NV Pump 1B	JJ-54	543 + 0	2	0	0	Hourly
16	NV Pump 1A	JJ-55	543 + 0	2	0	0	Hourly
17	Aisles/Cables	KK-56	543 + 0	18	0	0	Hourly
18	Aisles/Cables	EE-55	543 + 0	6	0	0	Hourly
19	CA Pumps (Unit 2)	BB-63	543 + 0	14	0	0	Continuous
20	Mech Pen Room	JJ-62	543 + 0	3	0	0	Hourly
21	Aisles/Cables	NN-61	543 + 0	6	0	0	Hourly
22	NV Pump #2 (Unit 2)	JJ-60	543 + 0	1	0	0	Hourly
23	NI Pump 2B	HH-60	543 + 0	1	0	0	Hourly
24	NI Pump 2A	GG-60	543 + 0	1	0	0	Hourly
25	NV Pump 2B	JJ-59	543 + 0	2	0	0	Hourly
26	NV Pump 2A	JJ-58	543 + 0	2	0	0	Hourly
27	Aisles/Cables	KK-59	543 + 0	20	0	0	Hourly
28	Aisles/Cables	EE-58	543 + 0	6	0	0	Hourly
29	Swgr Equip Room	AA-50	560 + 0	7	0	0	Continuous
30	Elect Pen Room	CC-50	560+ 0	8	0	0	Continuous
31	Corridor/Cables	EE-53	560 + 0	5	0	0	Hourly
32	Corridor/Cables	KK-52	560 + 0	8	0	0	Hourly

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
33	Corridor/Cables	NN-54	560 + 0	9[3]	0	0	Hourly
34	Aisles/Cables	JJ-56	560 + 0	14	0	0	Hourly
35	Motor Control Center	GG-56	560 + 0	2	0	0	Hourly
36	Cable Tray Access	FF-56	568 + 0	2	0	0	Hourly
37	Equip Batteries	DD-55	554 + 0	5	0	0	Hourly
38	Equip Batteries	CC-55	544 + 0	5	0	0	Hourly
39	Battery Room	CC-56	554 + 0	17	0	0	Hourly
41	Swgr Equip Room	AA-64	560 + 0	7	0	0	Continuous
42	Elect Pen Room	CC-65	560 + 0	8	0	0	Continuous
43	Corridor/Cables	FF-61	560 + 0	5	0	0	Hourly
44	Aisles/Cables	KK-63	560 + 0	8	0	0	Hourly
45	Aisles/Cables	NN-60	560 + 0	12[3]	0	0	Hourly
46	Aisles/Cables	HH-59	560 + 0	13	0	0	Hourly
47	Motor Control Center	GG-58	560 + 0	2	0	0	Hourly
48	Cable Tray Access	FF-58	560 + 0	2	0	0	Hourly
49	Equip Batteries	DD-60	560 + 0	5	0	0	Hourly
50	Equip Batteries	CC-60	560 + 0	5	0	0	Hourly
51	Battery Room	CC-59	560 + 0	17	0	0	Hourly
53	Swgr Equip Room	AA-49	577 + 0	7	0	0	Continuous
54	Elect Pen Room	CC-50	577 + 0	10	0	0	Continuous
55	Aisles/Cables	NN-52	577 + 0	8[3]	0	0	Hourly
56	Aisles/Cables	PP-55	577 + 0	13[3]	0	0	Hourly
57	Aisles/Cables	LL-55	577 + 0	11	0	0	Hourly
58	Aisles/Cables	HH-55	577 + 0	19[3]	0	0	Hourly
59	Motor Control Center	EE-54	577 + 0	2	0	0	Hourly
60	Cable Room	CC-56	574 + 0	18	0	0	Hourly
62	Swgr Equip Room	AA-64	577 + 0	7	0	0	Continuous
63	Elect Pen Room	CC-64	577 + 0	10	0	0	Continuous
64	Aisles/Cables	PP-62	577 + 0	8[3]	0	0	Hourly
65	Aisles/Cables	PP-59	577 + 0	11[3]	0	0	Hourly
66	Aisles/Cables	LL-59	577 + 0	11	0	0	Hourly
67	Aisles/Cables	HH-59	577 + 0	19[3]	0	0	Hourly

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
68	Motor Control Center	FF-60	577 + 0	2	0	0	Hourly
69	Cable Room	CC-59	577 + 0	18	0	0	Continuous
71	Elect Pen Room	CC-51	594 + 0	10	0	0	Hourly
72	Control Room	CC-56	594 + 0	25	0	0	Hourly
73	Vent Equip Room	FF-56	594 + 0	9	0	0	Hourly
74	Aisles/Cables	LL-56	594 + 0	25	0	0	Hourly
76	Aisles/Cables	PP-54	594 + 0	15	0	0	Hourly
79	Elect Pen Room	BB-63	594 + 0	11	0	0	Hourly
80	Control Room	BB-59	594 + 0	22	0	0	Hourly
81	Vent Equip Room	FF-58	594 + 0	12	0	0	Hourly
82	Aisles/Cables	KK-58	594 + 0	27	0	0	Hourly
84	Aisles/Cables	NN-58	594 + 0	17	0	0	Hourly
89	Fuel Pool Area (Unit 1)	PP-50	605 + 10	19	7	0	Hourly
90	Fuel Pool Area (Unit 2)	PP-64	605 + 10	19	7	0	Hourly
129	Fuel Pool Purge Room (Unit 1)	NN-50	631 + 6	6	0	0	Hourly
131	Reactor Bldg (Unit 1)	0^0-45^0	Below 565 + 3	4	0	0	8-Hour[4]
132	Reactor Bldg (Unit 1)	45^0-90^0	Below 565 + 3	3	0	0	8-Hour[4]
133	Reactor Bldg (Unit 1)	90^0-135^0	Below 565 + 3	4	0	0	8-Hour[4]
134	Reactor Bldg (Unit 1)	135^0-180^0	Below 565 + 3	5	0	0	8-Hour[4]
135	Reactor Bldg (Unit 1)	180^0-225^0	Below 565 + 3	4	0	0	8-Hour[4]
136	Reactor Bldg (Unit 1)	270^0-315^0	Below 565 + 3	3	0	0	8-Hour[4]
137	Reactor Bldg (Unit 1)	315^0-0^0	Below 565 + 3	8	0	0	8-Hour[4]
138	Reactor Bldg (Unit 1)	0^0-45^0	Below 586 + 3	6	0	0	8-Hour[4]
139	Reactor Bldg (Unit 1)	45^0-90^0	Below 586 + 3	4	0	0	8-Hour[4]
140	Reactor Bldg (Unit 1)	90^0-135^0	Below 565 + 3	3	0	0	8-Hour[4]
141	Reactor Bldg (Unit 1)	135^0-180^0	Below 586 + 3	8	0	0	8-Hour[4]
142	Reactor Bldg (Unit 1)	180^0-225^0	Below 586 + 3	5	0	0	8-Hour[4]
143	Reactor Bldg (Unit 1)	315^0-0^0	Below 586 + 3	5	0	0	8-Hour[4]
144	Reactor Bldg (Unit 1)	0^0-45^0	Below 593 + 2 1/2	14	0	0	8-Hour[4]
145	Reactor Bldg (Unit 1)	45^0-90^0	Below 593 + 2 1/2	16	0	0	8-Hour[4]

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
146	Reactor Bldg (Unit 1)	90^0-135^0	Below 593 + 2 1/2	11	0	0	8-Hour[4]
147	Reactor Bldg (Unit 1)	135^0-180^0	Below 593 + 2 1/2	10	0	0	8-Hour[4]
148	Reactor Bldg (Unit 1)	180^0-225^0	Below 593 + 2 1/2	2	0	0	8-Hour[4]
149	Reactor Bldg (Unit 1)	315^0-0^0	Below 593 + 2 1/2	7	0	0	8-Hour[4]
150	Reactor Bldg (Unit 2)	0^0-45^0	Below 565 + 3	4	0	0	8-Hour[4]
151	Reactor Bldg (Unit 2)	45^0-90^0	Below 565 + 3	3	0	0	8-Hour[4]
152	Reactor Bldg (Unit 2)	90^0-135^0	Below 565 + 3	4	0	0	8-Hour[4]
153	Reactor Bldg (Unit 2)	135^0-180^0	Below 565 + 3	5	0	0	8-Hour[4]
154	Reactor Bldg (Unit 2)	180^0-225^0	Below 565 + 3	3	0	0	8-Hour[4]
155	Reactor Bldg (Unit 2)	270^0-315^0	Below 565 + 3	4	0	0	8-Hour[4]
156	Reactor Bldg (Unit 2)	315^0-0^0	Below 565 + 3	6	0	0	8-Hour[4]
157	Reactor Bldg (Unit 2)	0^0-45^0	Below 586 + 6	6	0	0	8-Hour[4]
158	Reactor Bldg (Unit 2)	45^0-90^0	Below 586 + 6	4	0	0	8-Hour[4]
159	Reactor Bldg (Unit 2)	90^0-135^0	Below 586 + 6	3	0	0	8-Hour[4]
160	Reactor Bldg (Unit 2)	135^0-180^0	Below 586 + 6	8	0	0	8-Hour[4]
161	Reactor Bldg (Unit 2)	180^0-225^0	Below 586 + 6	5	0	0	8-Hour[4]
162	Reactor Bldg (Unit 2)	315^0-0^0	Below 586 + 6	5	0	0	8-Hour[4]
163	Reactor Bldg (Unit 2)	0^0-45^0	Below 593 + 2 1/2	13	0	0	8-Hour[4]
164	Reactor Bldg (Unit 2)	45^0-90^0	Below 593 + 2 1/2	17	0	0	8-Hour[4]
165	Reactor Bldg (Unit 2)	90^0-135^0	Below 593 + 2 1/2	13	0	0	8-Hour[4]
166	Reactor Bldg (Unit 2)	135^0-180^0	Below 593 + 2 1/2	10	0	0	8-Hour[4]
167	Reactor Bldg (Unit 2)	180^0-225^0	Below 593 + 2 1/2	2	0	0	8-Hour[4]
168	Reactor Bldg (Unit 2)	315^0-0^0	Below 593 + 2 1/2	7	0	0	8-Hour[4]
169	NC Pump 1A	45^0	593 + 2 1/2	0	0	1[2]	8-Hour[4]
170	NC Pump 1B	135^0	593 + 2 1/2	0	0	1[2]	8-Hour[4]
171	NC Pump 1C	225^0	593 + 2 1/2	0	0	1[2]	8-Hour[4]
172	NC Pump 1D	315^0	593 + 2 1/2	0	0	1[2]	8-Hour[4]
173	NC Pump 2A	45^0	Below 593 + 2 1/2	0	0	1[2]	8-Hour[4]
174	NC Pump 2B	135^0	Below 593 + 2 1/2	0	0	1[2]	8-Hour[4]
175	NC Pump 2C	225^0	Below 593 + 2 1/2	0	0	1[2]	8-Hour[4]
176	NC Pump 2D	315^0	Below 593 + 2 1/2	0	0	1[2]	8-Hour[4]
177	Filter Bed Unit 1A	0^0	Below 565 + 3	2	0	0	8-Hour[4]

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
178	Filter Bed Unit 1B	180^0	Below 565 + 3	2	0	0	8-Hour[4]
179	Filter Bed Unit 2A	0^0	565 + 3	2	0	0	8-Hour[4]
180	Filter Bed Unit 2B	180^0	565 + 3	2	0	0	8-Hour[4]
181a	Annulus (Unit 1)	0^0-350^0	561 + 0	0	0	1[2]	Hourly
181b	Annulus (Unit 1)	10^0-360^0	583 + 0	0	0	1[2]	Hourly
181c	Annulus (Unit 1)	0^0-350^0	604 + 0	0	0	1[2]	Hourly
181d	Annulus (Unit 1)	10^0-360^0	629 + 5	0	0	1[2]	Hourly
181e	Annulus (Unit 1)	0^0-350^0	649 + 5	0	0	1[2]	Hourly
181f	Annulus (Unit 1)	10^0-360^0	664 + 0	0	0	1[2]	Hourly
182a	Annulus (Unit 2)	0^0-350^0	561 + 0	0	0	1[2]	Hourly
182b	Annulus (Unit 2)	10^0-360^0	583 + 0	0	0	1[2]	Hourly
182c	Annulus (Unit 2)	0^0-350^0	604 + 0	0	0	1[2]	Hourly
182d	Annulus (Unit 2)	10^0-360^0	629 + 5	0	0	1[2]	Hourly
182e	Annulus (Unit 2)	0^0-350^0	649 + 5	0	0	1[2]	Hourly
182f	Annulus (Unit 2)	10^0-360^0	664 + 0	0	0	1[2]	Hourly
183	Fuel Pool Purge Room (Unit 2)	NN-64	631 + 6	6	0	0	Hourly
184	HVAC Duct for Rooms 331 & 332	FF-53	543 + 0	1(Duct)	0	0	Hourly
185	HVAC Duct for Rooms 203, 205, 205A, 206A, 206B, 207, & 209A	MM-60	543 + 0	1(Duct)	0	0	Hourly
186	HVAC Duct for Rooms 301, 302, 305, & 307	NN-60	560 + 0	1(Duct)	0	0	Hourly
212	Aisles/Cables	GG-57	522 + 0	2	0	0	Hourly
213	Aux Battery Room	AA-55	544 + 0	4	0	0	Hourly
214	Aux Control Power Batteries	AA-59	560 + 0	4	0	0	Hourly
215	D/G Corridor	BB-45	556 + 0	4	0	0	Hourly
216	D/G Corridor	AA-45	556 + 0	3	0	0	Hourly
217	D/G Corridor	CC-71	560 + 0	4	0	0	Hourly
218	D/G Corridor	BB-71	560 + 0	3	0	0	Hourly

Table 16.9-6-1

Fire Detection Instruments

FIRE ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS[1]			FIRE WATCH REQUIREMENT
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
219	Mech Pen Room	HH-52	577 + 0	6	0	0	Hourly
220	Mech Pen Room	JJ-62	577 + 0	6	0	0	Hourly
222	Airlock Access (Unit 1)	JJ-51	605 + 10	1	0	0	Hourly
224	Airlock Access (Unit 2)	JJ-63	605 + 10	1	0	0	Hourly
225	RN Pump Structure (B Train)	West Section	600 + 0	8	0	0	Hourly
226	RN Pump Structure (A Train)	East Section	600 + 0	8	0	0	Hourly
231	Reactor Bldg (Unit 1)	260^0-303^0	Below 668 + 10	10	0	0	8-Hour[4]
232	Reactor Bldg (Unit 2)	260^0-303^0	Below 668 + 10	10	0	0	8-Hour[4]

(1) The fire detection instruments located within the containment are not required to be OPERABLE during the performance of Type A containment leakage rate tests.

(2) Line type detector.

(3) See Bases section for explanation of the number of required detectors for this zone.

(4) For zones inside containment, establish a fire watch patrol once per 8 hours OR monitor containment air temperature once per hour at the locations listed in Technical Specification Surveillance Requirements 3.6.5.1 or 3.6.5.2 as applicable.

BASES

OPERABILITY of the detection instrumentation ensures that adequate warning capability is available for prompt detection of fires. Prompt detection and suppression of fires will reduce the potential for damage to safety related equipment and is an integral element in the overall facility Fire Protection Program.

An acceptable method to satisfy the functional test requirement for smoke detectors is by pre-testing (actuates at the required setpoint within the required accuracy) the detection instruments, replacing all detection instruments on a signaling circuit, and then actuating one detection instrument on the signaling circuit to verify operability of alarm.

The following detectors are not included in the Table 16.9-6-1 EFA Zones as "REQUIRED INSTRUMENTS" because they are located in high radiation areas with minimal combustible loading, or because they are located in non-safety related areas. As a result, they are also exempt from the TESTING REQUIREMENTS given in this SLC:

EFA ZONE	DETECTOR NUMBER (NOTE 1)	ROOM NUMBER	LOCATION	REASON CODE
33	A04	315	560, Valve Gallery, LL/53	1
45	A04	306	560, Valve Gallery, LL/61	1
55	A02	417	577, U1 KF Demin. Room, NN-PP/51	1
64	A08	408	577, U2 KF Demin. Room, NN-PP/63	1
56	A14, A15, A16	401	577, Elevator Corridor, RR-SS/55-58	2
58	A01	476	577, U1 Letdown Hx Room, KK/53	1
58	A02	477	577, U1 Moderating Hx Room, JJ/53	1
67	A17	467	577, U2 Letdown Hx Room, KK/61	1
67	A18	468	577, U2 Moderating Hx Room, JJ/61	1
65	A01, A02	405	577, Filter Bunker Room, RR-SS/58-60	2
65	A08	550	577, Radwaste Batching Tank Room, NN-PP/60	1
65	A05	404A	577, Evap. Concentrate Batching Tank Room, PP-QQ/59	1
65	A04	404B	577, Radwaste Feed Skid and Dewatering Pump Room, PP-QQ/59-60	1
65	A10	404C	577, Evap. Concentrate Holdup Tank Room, NN-PP/59	1
65	A12	403	577, Container and Drum Storage Room, NN/57-58	1

BASES (continued)

REASON CODES: 1. High radiation area
2. Non-safety related area

NOTE 1 For the individual detector designation, see the EFA System Detector Test Procedure(s) (IP/0/A/3350 series).

Excluding the detectors in the above listed rooms from the "REQUIRED INSTRUMENTS" is acceptable for the following reasons:

- All of the above listed detectors, with the exception of detector A12 in EFA Zone 65, are located in rooms that consist of very little to no combustible loading. These rooms contain primarily piping and mechanical equipment such as tanks, demineralizers, or heat exchangers. This type of equipment is not significantly prone to fire damage or fire propagation. In the case of detector A12 in EFA Zone 65, the room is separated from adjacent areas with fire rated three-foot thick concrete walls and has additional detectors in the room that will remain in the scope of this SLC.
- All of the above listed rooms are adjacent to areas that also contain smoke detectors that alarm to the control room. Thus, in the unlikely event that a significant fire should occur in one of these rooms, the smoke detectors in the adjacent areas would provide an alarm to the control room.
- These rooms are either located in non-safety related areas, or are located in safety related areas, but contain components that do not perform a safe shutdown function.
- The areas adjacent to these rooms rely on the same assured train of post fire safe shutdown. Therefore, a fire in any of these rooms or in an adjacent area would have no adverse impact on post fire safe shutdown, even in the unlikely event of fire extension to the adjacent areas.

EFA Zones 9, 19, 29, 30, 41, 42, 53, 54, 62, 63, and 69 require a continuous fire watch versus an hourly fire watch because these zones are associated with fire areas that require control room operator actions associated with protecting the available suction source for the NV charging pumps.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of Section 2.C. of the Catawba Facility Operating Licenses.

REFERENCES

1. Catawba UFSAR, Section 9.5.1.

2. Catawba SER, Section 9.5.1, including Supplements 2, 3, 4, and 5.

3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.

16.9 AUXILIARY SYSTEMS

16.9-8 Boration Systems Flow Paths - Operating

COMMITMENT Two of the following three boron injection flow paths shall be OPERABLE:

a. The flow path from the boric acid tanks via a boric acid transfer pump and a charging pump to the Reactor Coolant System (RCS), and

b. Two flow paths from the Refueling Water Storage Tank (RWST) via charging pumps to the RCS.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all RCS cold leg temperatures > 210°F.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required Boration System Flow Path inoperable.	A.1 Restore the required Boration System Flow Path to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3.	6 hours
	AND	
	B.2 Borate to a SDM equivalent to ≥ 1% Δk/k at 200°F.	6 hours
	AND	
	B.3 Restore the required Boration System Flow Path to OPERABLE status.	7 days

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 4 with any RCS cold leg temperature ≤ 210°F.	30 hours

TESTING REQUIREMENTS

TEST		FREQUENCY
TR 16.9-8-1	Verify that the temperature of the flow path from the boric acid tanks is ≥ 65°F when it is a required water source.	7 days
TR 16.9-8-2	Verify that each manual, power operated, or automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.	31 days
TR 16.9-8-3	Verify, during shutdown, that each automatic valve in the flow path actuates to the correct position on a safety injection test signal.	18 months
TR 16.9-8-4	Verify that the flow path required by SLC 16.9-8a. delivers ≥ 30 gpm to the RCS.	18 months

BASES

The Boration System Flow Paths ensure that negative reactivity control is available during each MODE of facility operation. The components required to perform this function include separate flow paths and boric acid transfer pumps.

In MODES 1, 2, and 3, and MODE 4 with all RCS cold leg temperatures above 210°F, a minimum of two boron injection flow paths are required to ensure single functional capability in the event an assumed failure renders one of the flow paths inoperable. The boration capability of either flow path, in association with a charging pump and borated water source, is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 1.3% $\Delta k/k$ after xenon decay and cooldown to 200°F.

BASES (continued)

Above 210°F, the charging pumps are the only pumps that can be assured to be capable of injecting into the RCS against the maximum pressure allowed by the RCS heatup and cooldown curves.

REFERENCES

1. Letter from NRC to Gary R. Peterson, Duke, Issuance of Improved Technical Specifications Amendments for Catawba, September 30, 1998.

16.9 AUXILIARY SYSTEMS

16.9-10 Boration Systems Charging Pumps - Operating

COMMITMENT Two charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all Reactor Coolant System (RCS) cold leg temperatures > 210°F.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One Boration System Charging Pump inoperable.	A.1 Restore the inoperable Boration System Charging Pump to OPERABLE status.	72 hours
B. Required Action and associated Completion Time of Condition A not met.	B.1 Be in MODE 3. AND B.2 Borate to a SDM equivalent to ≥ 1% Δk/k at 200°F. AND B.3 Restore the inoperable Boration System Charging Pump to OPERABLE status.	6 hours 6 hours 7 days
C. Required Action and associated Completion Time of Condition B not met.	C.1 Be in MODE 4 with any RCS cold leg temperature ≤ 210°F.	30 hours

TESTING REQUIREMENTS

TEST		FREQUENCY
TR 16.9-10-1	Verify that each charging pump's developed head at the test flow point is greater than or equal to the required developed head.	In accordance with the Inservice Testing Program

BASES

The Boration System Charging Pumps ensure that negative reactivity control is available during each MODE of facility operation.

In MODES 1, 2, and 3, and MODE 4 with all RCS cold leg temperatures above 210°F, two charging pumps are required to ensure single functional capability in the event an assumed failure renders one of the charging pumps inoperable. The boration capability of either charging pump, in association with a flow path and borated water source, is sufficient to provide a SHUTDOWN MARGIN from expected operating conditions of 1.3% $\Delta k/k$ after xenon decay and cooldown to 200°F.

Above 210°F, the charging pumps are the only pumps that can be assured to be capable of injecting into the RCS against the maximum pressure allowed by the RCS heatup and cooldown curves.

REFERENCES

1. Letter from NRC to Gary R. Peterson, Duke, Issuance of Improved Technical Specifications Amendments for Catawba, September 30, 1998.

16.9 AUXILIARY SYSTEMS

16.9-24 Alternate Cooling for Charging Pumps

COMMITMENT The station Drinking Water System (YD) shall be in its normal alignment and capable of supplying an alternate cooling water source for the Unit 1A and Unit 2A centrifugal charging pumps.

APPLICABILITY: MODES 1, 2, and 3,
MODE 4 with all Reactor Coolant System (RCS) cold leg temperatures > 210°F.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. COMMITMENT not met.	A.1 Restore the YD System to normal COMMITMENT alignment and service.	In accordance with the Electronic Risk Assessment Tool

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-24-1 Verify that YD pressure is ≥ 50 psig at the outlet of the YD pressure regulating valves.	7 days
TR 16.9-24-2 Verify adequate YD flow through the 1A and 2A centrifugal charging pumps.	18 months

BASES Effective implementation of the Maintenance Rule, 10 CFR 50.65, requires the continuous assessment of systems determined to be risk significant in the protection against core damage or radiation release. It has been determined through Probabilistic Risk Assessment (PRA) numerical methods that the chemical and volume control system is risk significant from the standpoint of supplying seal water to the reactor coolant pumps during a loss of component cooling event. This SLC serves two purposes. It defines the risk significance of the YD System and provides a method of tracking the system for the purposes of supporting 10 CFR 50.65.

BASES (continued)

The original SLC stated that the supply header pressure should be 60 psig. This pressure was intended to be the pressure on the supply side of the pressure regulating valves. With a design pressure drop of 10 psi across the regulating valves (CNM-1205.06-0410-001), the corresponding downstream pressure would be 50 psig. The pressure required to support centrifugal charging pump operation has been determined to be 40 psig, per calculations CNC-1223.23-00-54 & 55. As a conservative measure and based on the calculations above, the pressure established to meet the COMMITMENT is 50 psig. 0YDPG5250 and/or 0YDPG5270 will be used to meet the weekly surveillance. During periods of high YD usage, the pressure as indicated on the gauges above may temporarily drop below the 50 psig value due to the operation of the pressure control valves. The intention of the 50 psig limit is for this to be an average value.

YD can supply either centrifugal charging pump 1A or centrifugal charging pump 2A, but not both at the same time. Station procedures (abnormal procedures and periodic test procedures) reflect this limitation of being able to supply only one pump at a time. TR 16.9-24-2 does not imply that the supply is verified to both pumps at the same time.

REFERENCES

1. 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.

2. CNC-1535.00-00-0008, Severe Accident Analysis Report, CNS PRA Risk Significant SSCs for the Maintenance Rule.

3. CNS-1554.NV-00-0001, Chemical and Volume Control Design Basis Specification.

4. SLC 16.9-9, Boration Systems Pumps – Shutdown.

5. SLC 16.9-10, Boration Systems Charging Pumps – Operating.

6. CNC-1223.04-00-0054, Unit 1 CNS YD Calculation.

7. CNC-1223.04-00-0055, Unit 2 CNS YD Calculation.

16.10 STEAM AND POWER CONVERSION SYSTEM

16.10-2 Condenser Circulating Water System

COMMITMENT **With the Condenser Circulating Water System (RC) partially or completely filled, the system boundaries within the turbine building and RC pump pit shall be in their normal alignment.**

APPLICABILITY: **All plant conditions which require the availability of the 6900/4160V essential transformers (SATA, SATB, 1ATC, 1ATD, 2ATC, 2ATD) for either train and for either unit.**

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. COMMITMENT not met.	A.1 Restore the RC System boundaries to normal COMMITMENT alignment.	In accordance with the Electronic Risk Assessment Tool

TESTING REQUIREMENTS None

BASES The effective implementation of the Maintenance Rule, 10 CFR 50.65, requires the continuous assessment of systems determined risk significant in the protection against core damage or radiation release. It has been determined through Probabilistic Risk Assessment (PRA) numerical methods that this system function provides a significant contribution to the defense in the prevention of a Loss of Offsite Power event. This SLC serves two purposes.

(1) It defines the risk significant concerns of the RC System integrity with respect to flooding either unit's 6900/4160V essential transformers. A failure to control the RC System inventory while partially or completely full has the potential consequence of degrading the power function of the 6900/4160V essential transformers for either or both units. Damage to these transformers may result in either the Loss of Offsite Power or a significant decrease in the defense of accident mitigating equipment. The concern from this event includes either RC System of Unit 1 or Unit 2 leading to the effect on either unit/train transformers.

BASES (continued)

(2) This SLC also provides a method of tracking this function for intersystem configuration control of the essential transformers and their susceptibility to flooding through 10 CFR 50.65.

REFERENCES

1. CNS UFSAR, Section 10.4.5.3.

2. 10 CFR 50.65, Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants.

3. SAAG File: 160 Severe Accident Analysis Report, CNS Probability Risk Assessment (PRA) Risk Significant SSCs for the Maintenance Rule.