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10 CFR 50.71(e)

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Subject: Duke Energy Carolina, LLC
Catawba Nuclear Station, Unit 1 and Unit 2
Docket Nos. 50-413 and 50-414
UFSAR/Selected Licensee Commitment Changes

Pursuant to 10 CFR 50.71(e), please find attached changes to the Catawba Nuclear Station Selected Licensee Commitments Manual. This document constitutes Chapter 16 of the Updated Final Safety Analysis Report (UFSAR).

Any questions regarding this information should be directed to Sherry Andrews, Regulatory Affairs, at (803) 701-3424.

I declare under penalty of perjury that the foregoing is true and correct. Executed on September 28, 2017.

Sincerely,

Tom Simril,
Vice President, Catawba Nuclear Station

Enclosure

A053
NRR

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cc: (with enclosure)

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Remove and Insert

Replace the following page(s) of Catawba Nuclear Station Selected Licensee Commitments (SLC) Manual with the attached revised page(s). The revised page(s) are identified by Section number and contains marginal lines indicating the areas of change.

REMOVE THESE PAGES

INSERT THESE PAGES

LIST OF EFFECTIVE SECTIONS

Pages 1 through 5
Revision 68

Pages 1 through 5
Revision 69

TAB 16.7

16.7-9
Revision 9

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16.7-6	3	06/10/16
16.7-7	1	08/21/09
16.7-8	2	08/21/09
16.7-9	10	08/03/17
16.7-10	7	03/28/16
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16.7-12	1	08/21/09
16.7-13	3	06/10/16
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16.7-15	1	08/21/09
16.7-16	0	06/08/09
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16.8-1	6	12/10/15
16.8-2	2	02/20/12
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16.9-7	4	08/21/09
16.9-8	5	08/21/09
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16.9-13	4	09/27/16
16.9-14	1	09/25/06
16.9-15	2	08/21/09
16.9-16	2	08/21/09
16.9-17	0	10/09/02
16.9-18	0	10/09/02
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16.9-21	1	10/13/16
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16.11-2	4	02/10/15
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16.11-20	2	03/28/16
16.11-21	0	10/09/02
16.12-1	0	10/09/02
16.13-1	1	08/03/17
16.13-2	Deleted	
16.13-3	Deleted	

LIST OF EFFECTIVE SECTIONS

<u>SECTION</u>	<u>REVISION NUMBER</u>	<u>REVISION DATE</u>
16.13-4	1	08/03/17

16.7 INSTRUMENTATION

16.7-9 Standby Shutdown System (SSS)

COMMITMENT The SSS shall be FUNCTIONAL.

APPLICABILITY: MODES 1, 2, and 3.

REMEDIAL ACTIONS

-----NOTE-----

SLC 16.2.3 is not applicable.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. SSS non-functional.	A.1 Restore SSS to FUNCTIONAL status.	7 days
B. Total accumulative LEAKAGE from unidentified LEAKAGE, identified LEAKAGE, and reactor coolant pump seal LEAKAGE > 20 gpm.	B.1 Declare the standby makeup pump non-functional and enter Condition A.	Immediately
C. More than one cell in a 24-Volt battery bank is < 1.36 volts on float charge with no other cells jumpered.	C.1 Enter Condition A.	Immediately
D. Required Action and associated Completion Time of Condition A not met.	D.1 Be in MODE 3.	6 hours
	<u>AND</u> D.2 Be in MODE 4.	12 hours

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.7-9-1 Verify that the electrolyte level of each SSS diesel starting 24-Volt battery is \geq the low mark and \leq the high mark.	7 days
TR 16.7-9-2 Verify that the overall SSS diesel starting 24-Volt battery voltage is \geq 24 volts on float charge.	7 days
TR 16.7-9-3 Verify that the requirements of SLC 16.9-21 are met and the boron concentration in the storage pool is \geq the minimum specified in the COLR.	7 days
TR 16.7-9-4 Verify the fuel level in the SSS diesel generator fuel storage tank is \geq 67 inches.	31 days
TR 16.7-9-5 Verify the SSS diesel generator starts from ambient conditions and operates for \geq 30 minutes at \geq 700 kW.	31 days
TR 16.7-9-6 Verify that the electrolyte level of each SSS 250/125-Volt battery is above the plates.	31 days
TR 16.7-9-7 Verify the total SSS 250/125-Volt battery terminal voltage is \geq 258/129 volts on float charge.	31 days
TR 16.7-9-8 Perform CHANNEL CHECK of each SSS instrumentation device.	31 days
TR 16.7-9-9 Verify the fuel oil properties of new and stored fuel oil for the SSS diesel generator are tested in accordance with, and maintained within the limits of, the Diesel Fuel Oil Testing Program.	In accordance with the Diesel Fuel Oil Testing Program
TR 16.7-9-10 Verify that the SSS diesel starting 24-Volt battery individual cell voltage is \geq 1.36 volts on float charge.	92 days

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.7-9-11 Verify that the Standby Makeup Pump's developed head at the test flow point is \geq the required developed head, in accordance with the Inservice Testing Program.	92 days
TR 16.7-9-12 Verify that the specific gravity of the SSS 250/125-Volt battery is appropriate for continued service of the battery.	92 days
TR 16.7-9-13 Subject the SSS diesel generator to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.	18 months
TR 16.7-9-14 Verify that the SSS diesel starting 24-Volt batteries, cell plates, and battery racks show no visual indication of physical damage or abnormal deterioration.	18 months
TR 16.7-9-15 Verify that the SSS diesel starting 24-Volt battery-to-battery and terminal connections are clean, tight, and free of corrosion.	18 months
TR 16.7-9-16 Verify that the SSS 250/125-Volt batteries, cell plates, and battery racks show no visual indications of physical damage or abnormal deterioration.	18 months
TR 16.7-9-17 Verify that the SSS 250/125-Volt battery-to-battery and terminal connections are clean, tight, free of corrosion, and coated with anti-corrosion material.	18 months
TR 16.7-9-18 Verify that the steam turbine driven auxiliary feedwater pump and controls from the Standby Shutdown Facility function as designed from the SSS.	18 months
TR 16.7-9-19 Perform CHANNEL CALIBRATION of each SSS instrumentation device.	18 months

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.7-9-20 Verify proper installation of pressurizer insulation.	18 months
TR 16.7-9-21 Verify pressurizer heaters powered from the SSS have a capacity of ≥ 65 kW measured at motor control center SMXG.	18 months
TR 16.7-9-22 Verify flowpath from the reactor vessel head through the valves powered from the SSS is unobstructed.	18 months

BASES

The SSS is designed to mitigate the consequences of certain postulated fire, security, and station blackout incidents by providing capability to maintain MODE 3 conditions and by controlling and monitoring vital systems from locations external to the main control room. This capability is consistent with the requirements of 10 CFR Part 50.48(c).

The TESTING REQUIREMENTS ensure that the SSS systems and components are capable of performing their intended functions. The required level in the SSS diesel generator fuel storage tank ensures sufficient fuel for 72 hours uninterrupted operation. It is assumed that, within 72 hours, either offsite power can be restored or additional fuel can be added to the storage tank.

Although the standby makeup pump is not nuclear safety related and was not designed according to ASME Code requirements, it is tested quarterly to ensure its FUNCTIONALITY. The TESTING REQUIREMENT concerning the standby makeup pump water supply ensures that an adequate water volume is available to supply the pump continuously for 72 hours.

Total accumulative LEAKAGE is calculated in the NC System Leakage Calculation procedure as identified + unidentified + seal leakoff (References 2 and 3). The REMEDIAL ACTION limit of 20 gpm total accumulative LEAKAGE provides additional margin to allow for instrument inaccuracy, and for the predicted increase in seal leakoff rate due to heatup of the reactor coolant pump seal injection water supply temperature following the SSS event (due to spent fuel pool heatup). Following the increase in seal injection temperature, the standby makeup pump flow of 26 gpm is sufficient to provide in excess of this total accumulative LEAKAGE, thereby assuring that reactor coolant system inventory is maintained at MODE 3 conditions. The supporting evaluation

BASES (continued)

is provided in CNC-1223.04-00-0072 (Ref. 4).

A visual inspection of the diesel starting 24-volt batteries, cell plates, and battery racks provides an indication of physical damage or abnormal deterioration that could potentially degrade battery performance. Since the battery cell jars are not transparent, a direct visual inspection of the cell plates cannot be performed. Instead, the cell plates are inspected for physical damage and abnormal deterioration by: 1) visually inspecting the jar sides of each cell for excessive bowing and/or deformation, and 2) visually inspecting the electrolyte of each cell for abnormal appearance.

Verifying individual cell voltage while on float charge for the SSS diesel starting 24-Volt batteries ensures that each cell is capable of supporting its intended function. Float charge is the condition in which the charger is supplying the continuous charge required to overcome the internal losses of a battery (or battery cell) and maintain the battery (or battery cell) in a fully charged state. The battery cell voltage limit of 1.36 volts is consistent with the nominal design voltage of the battery and is based on the manufacturer's recommended minimum float charge voltage for a fully charged cell with adequate capacity. The battery is designed and sized with a capacity margin sufficient to allow up to one cell per battery bank to be fully degraded with a voltage < 1.36 volts assuming that no cells are jumpered out. The battery sizing calculations account for one degraded cell per battery bank by assuming the degraded cells undergo a worst case polarity reversal during SSS diesel starting.

Verification of proper installation of pressurizer insulation ensures that pressurizer heat losses during an SSS event do not exceed the capacity of the pressurizer heaters powered from the SSS.

Testing of the pressurizer heater capacity ensures the full capacity of the heaters is available to maintain a steam bubble in the pressurizer during an SSS event. The acceptance criterion includes an allowance for the voltage drop in the power cables between the SSS and the pressurizer.

Testing of the flowpath from the reactor vessel head to the pressurizer relief tank ensures sufficient flow capacity for reactor coolant inventory control during an SSS event.

REFERENCES

1. Letter from NRC to Gary R. Peterson, Duke, Issuance of Improved Technical Specifications Amendments for Catawba, September 30, 1998.
2. PT/1(2)/A/4150/001D, NC System Leakage Calculation.
3. PT/1(2)/A/4150/001I, Manual NC Leakage Calculation.
4. CNC-1223.04-00-0072, Reactor Coolant Pumps No. 1 Seal Leakoff Annunciator Alarm Setpoint for Unit 1 and Unit 2.
5. CNS-1560.SS-00-0001, Design Basis Specification for the Standby Shutdown Facility.
6. Catawba Technical Specification Amendments 206/200, July 10, 2003.
7. Catawba UFSAR, Section 18.2.4.
8. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.5.
9. CNC-1223.03-00-0033, Determination of Pressurizer Heater Capacity Powered from the SSF Diesel.
10. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
11. 10 CFR 50.48(c), Fire Protection.

16.9 AUXILIARY SYSTEMS

16.9-1 Fire Suppression Water System

- COMMITMENT The Fire Suppression Water System shall be FUNCTIONAL with:
- a. At least two fire suppression pumps, each with a capacity of 2500 gpm, with their discharge aligned to the fire suppression header, and
 - b. A FUNCTIONAL flow path capable of taking suction from Lake Wylie and transferring the water through distribution piping with FUNCTIONAL sectionalizing valves and isolation valves for each sprinkler system, hose standpipe, or fire hydrant required to be FUNCTIONAL per SLCs 16.9-2, 16.9-4, and 16.9-23.

APPLICABILITY: At all times.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One required pump and/or associated water supply non-functional.	A.1 Restore non-functional equipment to FUNCTIONAL status.	7 days
	<u>OR</u>	
	A.2 Provide alternate backup pump or supply.	7 days
B. Automatic starting function for all required pumps non-functional.	B.1 Place at least one pump in continuous operation.	Immediately
	<u>AND</u>	
	B.2 Restore non-functional equipment to FUNCTIONAL status.	7 days
C. Sectionalizing or isolation valve non-functional.	C.1 Evaluate impact on downstream fire suppression features (sprinkler system, hose standpipe, or fire hydrant) and enter SLCs 16.9-2, 16.9-4, and 16.9-23 as necessary.	24 hours
	<u>AND</u>	
	C.2 Implement necessary administrative controls to ensure a FUNCTIONAL flow path is maintained.	24 hours
D. Fire Suppression Water System non-functional for reasons other than Condition A, B, or C.	D.1 Establish backup Fire Suppression Water System.	24 hours

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-1-1 Start each electric motor-driven pump and operate it for \geq 15 minutes on recirculation flow.	20 days on a STAGGERED TEST BASIS
TR 16.9-1-2 Verify that each manual, power operated, or automatic valve in the flow path, which is accessible during plant operation, is in the correct position.	In accordance with performance based criteria in BASES
TR 16.9-1-3 Perform a system flush of the outside distribution loop and verify no flow blockage by fully opening the hydraulically most remote hydrant.	6 months
TR 16.9-1-4 -----NOTE----- Not applicable to valves RF389B, RF447B, and RF457B. ----- Cycle each testable valve in the flow path through at least one complete cycle of full travel.	12 months
TR 16.9-1-5 Verify that each manual, power operated, or automatic valve in the flow path, which is inaccessible during plant operation, is in the correct position.	18 months
TR 16.9-1-6 Perform a system functional test, including simulated automatic actuation of the system throughout its operating sequence, and: a. Verify that each fire suppression pump starts within 10 psig of its intended starting pressure (A pump, primary switch – 95 psig; B pump, primary switch – 90 psig; and C pump, primary switch – 85 psig); and b. Verify that each pump develops \geq 2500 gpm at a net pressure \geq 144 psig by testing at three points on the pump performance curve.	18 months

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.9-1-7 Cycle each valve in the flow path which is not testable during plant operation through at least one complete cycle of full travel.	18 months
TR 16.9-1-8 Perform a system flow test in accordance with Chapter 8, Section 16 of the National Fire Protection Association Fire Protection Handbook, 15th Edition.	3 years

BASES

The FUNCTIONALITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The Fire Suppression System consists of the water supply/distribution system, sprinkler systems, fire hose stations, fire hydrants, and CO₂ systems. The collective capability of the Fire Suppression Systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility Fire Protection Program.

The intent of COMMITMENT b. is to ensure a FUNCTIONAL flow path from the water source (in this case Lake Wylie), through FUNCTIONAL pumps as required in COMMITMENT a., and through the main header distribution piping – up to and including the branch lines for each sprinkler system, hose standpipe, or fire hydrant required to be FUNCTIONAL per SLCs 16.9-2, 16.9-4, and 16.9-23. When a sectionalizing valve or an isolation valve becomes non-functional, then the fire suppression features (sprinkler system, hose standpipe, or fire hydrant) affected must be evaluated and the applicable SLCs entered (16.9-2, 16.9-4, and 16.9-23). Condition C of this SLC would only apply if a non-functional sectionalizing valve(s) or isolation valve(s) rendered the entire main distribution piping non-functional.

The intent of TR 16.9-1-4 and TR 16.9-1-7 is to ensure the sectionalizing valve (main header valve used to isolate sections of the header) or isolation valve (branch line valve used to isolate specific fire suppression features (sprinkler system, hose standpipe, or fire hydrant)) is operating properly and can be used to achieve isolation when called upon. If a sectionalizing or isolation valve cannot be cycled but is in the correct position ensuring a FUNCTIONAL flow path (fully open) as required by COMMITMENT b., then the associated feature (sprinkler system, hose standpipe, or fire hydrant) can be considered FUNCTIONAL. If a sectionalizing or isolation valve cannot be cycled and is in the incorrect

BASES (continued)

position, or its position cannot be determined, thereby not ensuring a FUNCTIONAL flow path (not fully open) as required by COMMITMENT b., then the affected fire suppression feature (sprinkler system, hose standpipe, or fire hydrant) must be evaluated and the applicable SLCs entered (16.9-2, 16.9-4, and 16.9-23). If a sectionalizing valve in a loop header (i.e., flow path from two directions) cannot be cycled and it cannot be verified as fully open, then administrative controls may need to be implemented to ensure the available flow path is not isolated.

The ability to demonstrate that the valves in the RF/RV flow path can be cycled is critical to maintaining the system properly. The containment isolation valves (RF389B and RF447B) and the annulus sprinkler system isolation valve (RF457B) are required to be cycled or stroked in accordance with the Catawba Inservice Testing Program. Therefore, credit can be taken for cycling these valves under the IWV program, and they do not need to be cycled annually to meet the SLC criteria.

The proper positioning of RF/RV valves is critical to delivering fire suppression water at the fire source as quickly as possible. The option of increasing or decreasing the frequency of valve position verification allows the ability to optimize plant operational resources. Should an adverse trend develop with RF/RV valve positions, the frequency of verification shall be increased. Similarly, if the RF/RV valve position trends are positive, the frequency of verification could be decreased. Through programmed trending of RF/RV as found valve positions, the RF/RV System will be maintained at predetermined reliability standards. The Fire Protection Engineer is responsible for trending and determining verification frequencies based on the following:

Initially the frequency shall be monthly.

Annually review the results of the completed valve position verification procedures.

- If the results demonstrate that the valves are found in the correct position at least 99% of the time, the frequency of conducting the valve position verification may be decreased from monthly to quarterly or quarterly to semiannually or semiannually to annually as applicable. The frequency shall not be extended beyond annually (plus grace period).
- If the results demonstrate that the valves are not found in the correct position at least 99% of the time, the frequency of conducting the valve position verification shall be increased from annually to semiannually or semiannually to quarterly or quarterly to monthly as

applicable. The valve position verification need not be conducted more often than monthly.

BASES (continued)

In the event that portions of the Fire Suppression Systems are non-functional, alternate backup fire fighting equipment is required to be made available in the affected areas until the non-functional equipment is restored to service. When the non-functional fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the non-functional equipment is the primary means of fire suppression.

In the event the Fire Suppression Water System becomes non-functional, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant.

Since the requirement for fire suppression pump automatic starting functions is intended to provide a high level of system standby readiness, loss of a primary pressure switch renders its associated main fire pump non-functional. If the primary pressure switch for one of the two required pumps is non-functional, its associated pump is non-functional if not placed in continuous operation and Condition A applies. If both primary pressure switches for the required pumps are non-functional, it is acceptable to place at least one of the two required pumps in continuous operation and restore FUNCTIONALITY within 7 days, which is essentially meeting the requirements of Condition A (one of the two required pumps non-functional).

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of the Catawba Renewed Facility Operating License Conditions 2.C.(5).

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba UFSAR, Section 18.2.8.
5. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.12.1.
6. Catawba Renewed Facility Operating License Conditions 2.C.(5).

16.9 AUXILIARY SYSTEMS

16.9-2 Sprinkler and Spray Systems

COMMITMENT Sprinkler and Spray Systems in Table 16.9-2-1 shall be FUNCTIONAL.

APPLICABILITY: At all times, unless equipment protected by the spray or sprinkler system is out of service. .

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more HSS* required Sprinkler or Spray Systems non-functional.	A.1.1 Verify backup fire suppression equipment is available <u>AND</u>	1 hour
	A.1.2 Establish a continuous fire watch. <u>OR</u>	1 hour
	A.2.1 Verify backup fire suppression equipment is available. <u>AND</u>	1 hour
	A.2.2 Verify affected area has FUNCTIONAL fire detection instrumentation. <u>AND</u>	1 hour
	A.2.3 Establish hourly fire watch. <u>OR</u>	1 hour
	A.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement Required Action(s).	Prior to terminating Required Action A.1 or A.2.

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more LSS** required Sprinkler or Spray Systems non-functional.</p>	<p>B.1.1 Verify backup fire suppression equipment is available.</p> <p><u>AND</u></p>	<p>1 hour</p>
	<p>B.1.2 Establish hourly fire watch.</p> <p><u>OR</u></p>	<p>1 hour</p>
	<p>B.2.1 Verify backup fire suppression equipment is available.</p> <p><u>AND</u></p>	<p>1 hour</p>
	<p>B.2.2 Verify affected area has FUNCTIONAL fire detection instrumentation.</p> <p><u>AND</u></p>	<p>1 hour</p>
	<p>B.2.3 Establish a once per shift fire watch.</p> <p><u>OR</u></p>	<p>1 hour</p>
	<p>B.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement Required Action(s).</p>	<p>Prior to terminating Required Action B.1 or B.2.</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. One or more DID*** required Sprinkler or Spray Systems non-functional.	C.1.1 Verify backup fire suppression equipment is available. <u>AND</u>	1 hour
	C.1.2 Establish a once per shift fire watch. <u>OR</u>	1 hour
	C.2 Complete an evaluation as permitted by NRC RIS 2005-07 to implement Required Action(s).	Prior to terminating Required Action C.1

Table 16.9-2-1 denotes the Risk Criteria (HSS/LSS/DID)

*High Safety Significant (HSS) is defined by the Catawba NFPA 805 Monitoring Program.

**Low Safety Significant (LSS) is defined as those sprinkler or spray systems required by Risk as part of the Catawba NFPA 805 fire protection program.

***Defense-in-Depth (DID) is defined as those sprinkler or spray systems required by engineering evaluation or previous licensing approval as part of the Catawba NFPA 805 fire protection program; or systems protecting equipment important to safety added to the fire protection program as 'best practice'.

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-2-1 Verify that each manual, power operated, or automatic valve in the flow path, which is accessible during plant operation, is in the correct position.	In accordance with performance based criteria in BASES
TR 16.9-2-2 -----NOTE----- Not applicable to valves RF389B, RF447B, and RF457B. ----- Cycle each testable valve in the flow path through at least one complete cycle of full travel.	12 months
TR 16.9-2-3 Verify that each manual, power operated, or automatic valve in the flow path, which is inaccessible during plant operation, is in the correct position.	18 months
TR 16.9-2-4 For Sprinkler Systems, perform a system functional test by performing an inspector's test connection flow test.	18 months
TR 16.9-2-5 Cycle each valve in the flow path which is not testable during plant operation through at least one complete cycle of full travel.	18 months
TR 16.9-2-6 Visually inspect each Sprinkler and Spray System starting at the system isolation valve to verify the system's integrity.	18 months
TR 16.9-2-7 Visually inspect each nozzle's spray area to verify the spray pattern is not obstructed.	18 months
TR 16.9-2-8 For Spray Systems, perform a visual inspection and functional test of at least two detectors on each circuit, selecting different detectors each time so that all detectors are inspected/tested within 5 years.	18 months

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.9-2-9 For Spray Systems, perform a system functional test by verifying automatic valves in the flow path actuate to their correct position on a simulated actuation signal.	18 months

Table 16.9-2-1 (page 1 of 2)

Sprinkler/Spray Systems

ELEVATION/ROOM NUMBER	BUILDING/EQUIPMENT	SAFETY SIGNIFICANCE
a. Elevation 522+0	Auxiliary Building	
100, 101, 106, 111, 112	ND & NS connecting corridor Sprinkler System	DID
104	ND pump 1B Sprinkler System	DID
105	ND pump 1A Sprinkler System	DID
109	ND pump 2B Sprinkler System	DID
110	ND pump 2A Sprinkler System	DID
b. Elevation 543+0	Auxiliary Building	
230	NV pump 1A Sprinkler System	DID
231	NV pump 1B Sprinkler System	DID
240	NV pump 2A Sprinkler System	DID
241	NV pump 2B Sprinkler System	DID
250	Unit 1 CA pump room Sprinkler System	DID
260	Unit 2 CA pump room Sprinkler System	DID
c. Elevation 554+0	Auxiliary Building	
340	Unit 2 battery room corridor Sprinkler System (DD-EE)	DID
350	Unit 1 battery room corridor Sprinkler System (DD-EE)	DID

(continued)

Table 16.9-2.1 (page 2 of 2)

Sprinkler/Spray Systems

ELEVATION/ROOM NUMBER	BUILDING/EQUIPMENT	SAFETY SIGNIFICANCE
d.	Elevation 560+0	Auxiliary Building
	300	KC pumps 1A1, 1A2 Sprinkler System
	300	KC pumps 1B1, 1B2 Sprinkler System
e.	Elevation 574+0	Auxiliary Building
	480	Unit 2 cable room corridor Sprinkler System (DD-EE)
	490	Unit 1 cable room corridor Sprinkler System (DD-EE)
f.	Elevation 577+0	Auxiliary Building
	400	KC pumps 2A1, 2A2 Sprinkler System
	400	KC pumps 2B1, 2B2 Sprinkler System
g.		Reactor Buildings
		Unit 1 Annulus Sprinkler System
		Unit 2 Annulus Sprinkler System
h.		Turbine Buildings
	Elevation 594+0	CF Pumps 1A, 1B Spray Systems
	Elevation 594+0	CF Pumps 2A, 2B Spray Systems
	Elevation 568+0	Unit 1 Hydrogen Seal Oil Spray System
	Elevation 568+0	Unit 2 Hydrogen Seal Oil Spray System
	Elevation 594+0 & 619+6	Unit 1 Main Turbine Oil Piping Spray System
	Elevation 594+0 & 619+6	Unit 2 Main Turbine Oil Piping Spray System

BASES

The FUNCTIONALITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The Fire Suppression System consists of the water supply/distribution system, sprinkler and spray systems, fire hose stations, fire hydrants, and CO₂ systems. The collective capability of the Fire Suppression Systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility Fire Protection Program.

The ability to demonstrate that the valves in the RF/RV flow path can be cycled is critical to maintaining the system properly. The containment isolation valves (RF389B and RF447B) and the annulus sprinkler system isolation valve (RF457B) are required to be cycled or stroked in accordance with the Catawba Inservice Testing Program. Therefore, credit can be taken for cycling these valves under the IWV program, and they do not need to be cycled annually to meet the SLC criteria.

The intent of TR 16.9-2-2 and TR 16.9-2-5 is to ensure the sectionalizing valve (main header valve used to isolate sections of the header) or isolation valve (branch line valve used to isolate specific fire suppression features (sprinkler or spray system, hose standpipe, or fire hydrant)) is operating properly and can be used to achieve isolation when called upon. If a sectionalizing or isolation valve cannot be cycled but is in the correct position ensuring a FUNCTIONAL flow path (fully open) as required by COMMITMENT 16.9-1b., then the associated feature (sprinkler or spray system, hose standpipe, or fire hydrant) can be considered FUNCTIONAL. If a sectionalizing or isolation valve cannot be cycled and is in the incorrect position, or its position cannot be determined, thereby not ensuring a FUNCTIONAL flow path (not fully open) as required by COMMITMENT 16.9-1b., then the affected fire suppression feature (sprinkler or spray system, hose standpipe, or fire hydrant) must be evaluated and the applicable SLCs entered (16.9-2, 16.9-4, and 16.9-23). If a sectionalizing valve in a loop header (i.e., flow path from two directions) cannot be cycled and it cannot be verified as fully open, then administrative controls may need to be implemented to ensure the available flow path is not isolated.

The proper positioning of RF/RV valves is critical to delivering fire suppression water at the fire source as quickly as possible. The option of increasing or decreasing the frequency of valve position verification allows the ability to optimize plant operational resources. Should an adverse trend develop with RF/RV valve positions, the frequency of verification shall be increased. Similarly, if the RF/RV valve position trends are positive, the frequency of verification could be decreased. Through programmed trending of RF/RV as found valve positions, the RF/RV System will be maintained at predetermined reliability standards. The Fire Protection Engineer is responsible for trending and determining verification frequencies based on the following:

BASES (continued)

Initially the frequency shall be monthly.

Annually review the results of the completed valve position verification procedures.

- If the results demonstrate that the valves are found in the correct position at least 99% of the time, the frequency of conducting the valve position verification may be decreased from monthly to quarterly or quarterly to semiannually or semiannually to annually as applicable. The frequency shall not be extended beyond annually (plus grace period).
- If the results demonstrate that the valves are not found in the correct position at least 99% of the time, the frequency of conducting the valve position verification shall be increased from annually to semiannually or semiannually to quarterly or quarterly to monthly as applicable. The valve position verification need not be conducted more often than monthly.

In the event that portions of the Fire Suppression Systems are non-functional, alternate backup fire fighting equipment is required to be made available in the affected areas until the non-functional equipment is restored to service. When the non-functional fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the non-functional equipment is the primary means of fire suppression.

When a required Sprinkler or spray System is non-functional, the REMEDIAL ACTION is to establish an appropriate fire watch, and verify or establish backup fire suppression in the affected area. The REMEDIAL ACTION allows for the use of either a nearby fire hose station or a fire extinguisher as an acceptable means of backup fire suppression. Typically, the preferred choice is to credit a nearby fire hose station as the backup means of suppression. In most cases, nearby fire hose stations exist in the areas affected by a non-functional Sprinkler or spray System. However, in some instances there are areas that do not contain any fire hose stations, such as the Annulus. In the case of the Annulus Sprinkler System, credit is taken for the portable fire extinguishers near the upper and lower Annulus access doors as the backup means of suppression.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of Section 2.C. of the Catawba Renewed Facility Operation License Condition 2.C.(5).

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba UFSAR, Section 18.2.8.
5. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.12.1.
6. Catawba Renewed Facility Operating License Conditions 2.C.(5).
7. RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements.

16.9 AUXILIARY SYSTEMS

16.9-3 CO₂ Systems

COMMITMENT The following High Pressure and Low Pressure CO₂ Systems shall be FUNCTIONAL:

a. Low Pressure CO₂ System –

Diesel Generator Building 1A
Diesel Generator Building 1B
Diesel Generator Building 2A
Diesel Generator Building 2B

b. High Pressure CO₂ System –

Description	Associated Fire Detection Instrument (EFA) Zone
U1 Turbine Driven CA Pump Pit	9
1A Motor Driven CA Pump Pit	9
1B Motor Driven CA Pump Pit	9
U2 Turbine Driven CA Pump Pit	19
2A Motor Driven CA Pump Pit	19
2B Motor Driven CA Pump Pit	19

APPLICABILITY: Whenever equipment protected by the systems is required to be OPERABLE.

-----NOTE-----

Non-functional or breached fire barrier features (walls, floors, ceilings, doors, dampers, and penetration seals) affect CO₂ System FUNCTIONALITY, since openings affect the ability to achieve and maintain CO₂ concentrations within the room.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more Low Pressure CO₂ Systems non-functional.</p>	<p>A.1.1 Verify backup fire suppression equipment is available.</p> <p style="text-align: center;"><u>AND</u></p> <p>A.1.2 Establish continuous fire watch.</p> <p style="text-align: center;"><u>OR</u></p> <p>A.2.1 Verify backup fire suppression equipment is available.</p> <p style="text-align: center;"><u>AND</u></p> <p>A.2.2 Verify fire barrier between Train A and Train B diesel generator rooms is FUNCTIONAL.</p> <p style="text-align: center;"><u>AND</u></p> <p>A.2.3 Establish hourly fire watch.</p> <p style="text-align: center;"><u>OR</u></p> <p>A.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement Required Action(s)</p>	<p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>Prior to terminating Required Action A.1 or A.2</p>
<p>B. One or more High Pressure CO₂ Systems non-functional.</p>	<p>B.1.1 Verify backup fire suppression equipment is available.</p> <p style="text-align: center;"><u>AND</u></p> <p>B.1.2 Establish a continuous fire watch.</p> <p style="text-align: center;"><u>OR</u></p>	<p>1 hour</p> <p>1 hour</p> <p>(continued)</p>

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	B.2.1 Verify backup fire suppression equipment is available.	1 hour
	<u>AND</u>	
	B.2.2 Verify affected area has FUNCTIONAL fire detection instrumentation.	1 hour
	<u>AND</u>	
	B.2.3 Establish hourly fire watch.	1 hour
	<u>OR</u>	
	B.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement Required Action(s).	Prior to terminating Required Action B.1 or B.2

Testing Requirements

TEST		FREQUENCY
TR 16.9-3-1	Verify that each manual, power operated, or automatic valve in the flow path is in the correct position.	In accordance with performance based criteria in BASES
TR 16.9-3-2	Verify that the Low Pressure CO ₂ System storage tank level is > 44% of full capacity.	31 days
TR 16.9-3-3	Verify that the weight of each High Pressure CO ₂ System storage cylinder is ≥ 90% full charge weight.	6 months
TR 16.9-3-4	Perform a visual inspection of all spot type heat detectors in each initiating device circuit.	6 months
TR 16.9-3-5	-----NOTE----- A different detector shall be selected for each test. ----- Simulate system actuation by applying a heat source to one restorable spot type heat detector in each initiating device circuit.	6 months
TR 16.9-3-6	Verify that the supervisory function of the alarm circuits operates properly and provides correct alarm response for each initiating device circuit.	6 months
TR 16.9-3-7	Verify each Low Pressure CO ₂ System actuates manually and automatically, upon receipt of a simulated actuation signal.	18 months
TR 16.9-3-8	Verify that the Low Pressure CO ₂ System normal and emergency ventilation system fans receive an "off" signal upon system operation.	18 months

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
TR 16.9-3-9 Perform a visual inspection of the Low Pressure CO ₂ System discharge nozzles to assure no blockage.	18 months
TR 16.9-3-10 Verify each High Pressure CO ₂ System actuates manually and automatically, upon receipt of a simulated actuation signal.	18 months
TR 16.9-3-11 Verify that damper closure devices receive an actuation signal upon High Pressure CO ₂ System operation.	18 months
TR 16.9-3-12 Perform a visual inspection of the High Pressure CO ₂ System discharge nozzles to assure no blockage.	18 months
TR 16.9-3-13 Deleted.	

BASES

The FUNCTIONALITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The Fire Suppression System consists of the water supply/distribution system, sprinkler systems, fire hose stations, fire hydrants, and CO₂ systems. The collective capability of the Fire Suppression Systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility Fire Protection Program.

The proper positioning of RF/RV valves is critical to delivering fire suppression CO₂ at the fire source as quickly as possible. The option of increasing or decreasing the frequency of valve position verification allows the ability to optimize plant operational resources. Should an adverse trend develop with CO₂ Systems valve positions, the frequency of verification shall be increased. Similarly, if the CO₂ Systems valve position trends are positive, the frequency of verification could be decreased. Through programmed trending of CO₂ Systems as found valve positions, the CO₂ fire protection systems will be maintained at predetermined reliability standards. The Fire Protection Engineer is responsible for trending and determining verification frequencies based on the following:

BASES (continued)

Initially the frequency shall be monthly.

Annually review the results of the completed valve position verification procedures.

- If the results demonstrate that the valves are found in the correct position at least 99% of the time, the frequency of conducting the valve position verification may be decreased from monthly to quarterly or quarterly to semiannually or semiannually to annually as applicable. The frequency shall not be extended beyond annually (plus grace period).
- If the results demonstrate that the valves are not found in the correct position at least 99% of the time, the frequency of conducting the valve position verification shall be increased from annually to semiannually or semiannually to quarterly or quarterly to monthly as applicable. The valve position verification need not be conducted more often than monthly.

The main bank (9 cylinders) or the reserve bank (9 cylinders) provides a sufficient quantity of CO₂ to totally flood any of the three auxiliary feedwater pump pits with the required design concentration. Therefore, the High Pressure CO₂ System is FUNCTIONAL with the system aligned to either the main or the reserve bank of cylinders. The system is aligned to the main or reserve bank of cylinders by means of a local manual toggle switch.

In the event that portions of the Fire Suppression Systems are non-functional, alternate backup fire fighting equipment is required to be made available in the affected areas until the non-functional equipment is restored to service. When the non-functional fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the non-functional equipment is the primary means of fire suppression.

When a required CO₂ System is non-functional, the REMEDIAL ACTION is to establish an appropriate fire watch, and verify or establish backup fire suppression in the affected area. The REMEDIAL ACTION allows for the use of either a nearby fire hose station or fire extinguishers as an acceptable means of backup fire suppression. Typically, the preferred choice is to credit a nearby fire hose station as the backup means of suppression. In most cases, nearby fire hose stations exist in the areas affected by a non-functional CO₂ System.

The Associated Fire Detection Instrument (EFA) Zone is for area detection associated with Required Actions for Condition B, the high pressure CO₂ systems. The diesel generator rooms which are protected by low

pressure CO₂ systems do not have area detection or a Required Action dependent on EFA detection.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of the Catawba Renewed Facility Operating License Conditions 2.C.(5).

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10CFR50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba Renewed Facility Operating License Condition 2.C.(5).
5. RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements.

16.9 AUXILIARY SYSTEMS

16.9-4 Fire Hose Stations

COMMITMENT The Fire Hose Stations shown in Table 16.9-4-1 shall be FUNCTIONAL.

APPLICABILITY: At all times.

REMEDIAL ACTIONS

-----NOTES-----

1. To prevent a hazard to station personnel, plant equipment, or the hose itself, the fire hose can be stored in a roll at the outlet of the FUNCTIONAL Fire Hose Station or Fire Hydrant.
2. Credit can be taken for additional hose in yard hose equipment houses for providing equivalent capacity hose length to reach unprotected area when crediting a Fire Hydrant.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more Fire Hose Stations non-functional due to system alignments associated with Inservice Valve Testing for RF389B.</p>	<p>-----NOTE----- Signage shall be placed at the non-functional Fire Hose Station to identify the proper FUNCTIONAL Fire Hose Station or Fire Hydrant to use.</p>	<p>1 hour</p> <p>(continued)</p>
	<p>A.1 Stage personnel at the appropriate locations to establish a Fire Hose Station flow path in the event of a Fire Brigade response.</p> <p><u>OR</u></p>	

REMEDIAL ACTIONS		
CONDITION	REQUIRED ACTION	COMPLETION TIME
A. (continued)	A.2 Provide additional equivalent capacity fire hose of length to reach unprotected area at nearest FUNCTIONAL Fire Hose Station(s) or Fire Hydrant(s).	1 hour
B. One or more Fire Hose Stations non-functional for reasons other than Condition A	<p>-----NOTE----- Signage shall be placed at the non-functional Fire Hose Station to identify the proper FUNCTIONAL Fire Hose Station or Fire Hydrant to use. -----</p>	1 hour
	<p>B.1 Provide additional equivalent capacity fire hose of length to reach unprotected area at nearest FUNCTIONAL Fire Hose Station(s) or Fire Hydrant(s).</p> <p><u>OR</u></p> <p>B.2 Complete an evaluation as permitted by NRC RIS 2005-07 and implement alternative compensatory measures as required</p>	

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-4-1 Perform a visual inspection of the Fire Hose Stations accessible during plant operation to assure all required equipment is at the station and the fire hose shows no physical damage.	In accordance with performance based criteria in BASES
TR 16.9-4-2 Perform a visual inspection of the Fire Hose Stations not accessible during plant operation to assure all required equipment is at the station and the fire hose shows no physical damage.	18 months
TR 16.9-4-3 Inspect all fire hose gaskets and replace any degraded gaskets in the couplings.	18 months
TR 16.9-4-4 Partially open each Fire Hose Station valve to verify valve FUNCTIONALITY and no flow blockage.	3 years
TR 16.9-4-5 Perform a hose hydrostatic test at a pressure of ≥ 200 psig or ≥ 50 psig above maximum fire main operating pressure, whichever is greater.	3 years
TR 16.9-4-6 Remove each hose from the Fire Hose Station for inspection and reracking.	3 years

Table 16.9-4-1 (page 1 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
1. Auxiliary Building		
59, FF	522+0	1RF235
55, FF	522+0	1RF248
63-64, KK	543+0	1RF210
63, MM	543+0	1RF211
60, MM	543+0	1RF212
58, PP	543+0	1RF218
59, GG-HH	543+0	1RF236
60-61, FF-GG	543+0	1RF237
61-62, CC-DD	543+0	2RFA64
57, JJ	543+0	1RF242
54-55, GG	543+0	1RF249
57, FF	543+0	1RF250
52-53, GG	543+0	1RF255
52-53, CC-DD	543+0	1RFA64
50-51, JJ-KK	543+0	1RF262
53, MM	543+0	1RF268
50-51, NN	543+0	1RF271
62, MM-NN	560+0	1RF203
63, JJ-KK	560+0	1RF213
58, PP	560+0	1RF219
56, NN	560+0	1RF220
59, HH	560+0	1RF239
57, KK	560+0	1RF243
54-55, FF-GG	560+0	1RF251
51, KK	560+0	1RF263
52, MM-NN	560+0	1RF269
58, BB	554+0	1RF484
65, BB-CC	560+0	1RF485
62, AA-BB	560+0	1RF486
56, BB	554+0	1RF487
52, AA-BB	560+0	1RF488
49, BB-CC	560+0	1RF489
68-69, BB	560+0	1RF996
45-46, BB	560+0	1RF997
63, NN	577+0	1RF204
61, LL	577+0	1RF214
63, KK-LL	577+0	1RF215
58, PP	577+0	1RF221
59, JJ	577+0	1RF230

(continued)

Table 16.9-4-1 (page 2 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
58, GG	577+0	1RF240
56, KK	577+0	1RF244
54, GG	577+0	1RF252
52-53, KK	577+0	1RF258
51, KK	577+0	1RF264
51-52, NN	577+0	1RF272
56, PP	577+0	1RF278
68-69, BB	577+0	1RF478
65, BB-CC	577+0	1RF479
59, DD	574+0	1RF480
60, AA	574+0	1RF481
49, BB-CC	577+0	1RF490
45, BB	577+0	1RF491
55, DD	574+0	1RF492
54, AA	574+0	1RF493
63, AA	577+0	1RF993
51, AA	577+0	1RF998
62, NN	594+0	1RF205
57, MM	594+0	1RF222
63, JJ	594+0	1RF231
57, HH	594+0	1RF245
57, EE	594+0	1RF253
51, JJ	594+0	1RF259
53, NN	594+0	1RF275
64, BB	594+0	1RF984
50, BB	594+0	1RF985
51, KK	605+10	1RF265
63, JJ	605+10	1RF233
63-64, MM	631+6	1RF483
50-51, MM	631+6	1RF495
2. Fuel Pools		
65, TT-UU	605+10	1RF208
48, TT-UU	605+10	1RF276
63-64, MM	605+10	1RF482
50-51, MM	605+10	1RF822

(continued)

Table 16.9-4-1 (page 3 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
3. Low Pressure Service Water (LPSW) Intake Structure		
5, A	583+0	1RY178
2, E	583+0	1RY4
4. Service Building		
31, S	568+0	1RF163
26, S	568+0	1RF165
23, S	568+0	1RF166
20, R	568+0	1RF168
29, S	568+0	1RF175
20, U	568+0	1RF424
17, S	568+0	1RF425
35, P	574+0	1RF162
35, U-V	574+0	1RF310
27, R	594+0	1RF167
20, R	594+0	1RF169
18, T	594+0	1RF173
16, S	594+0	1RF174
30, S	594+0	1RF176
32, S	594+0	1RF311
35, Q	594+0	1RF312
35, U	594+0	1RF313
27, U	594+0	1RF314
22, R	594+0	1RF315
20, P	594+0	1RF316
22, T	594+0	1RF426
18, V	594+0	1RF430
33, Q	608+0	1RF419
33, U	608+0	1RF420
28, V	608+0	1RF971
28, S-T	608+0	1RF972
16, R	610+0	1RF432
37, R	611+0	1RF308
55, CC	611+0	1RF309
37, T	611+0	1RF475
33-34, Q	619+6	1RF422

(continued)

Table 16.9-4-1 (page 4 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
33-34, U	619+6	1RF423
22, 1N	619+6	1RF853
22, 2N	619+6	2RF853
5. Standby Shutdown Facility (SSF)		
7, B	594+0	1RF934
7, B	594+0	1RF935
5, C	594+0	1RF936
4, B	594+0	1RF937
6, C	611+0	1RF933
6. Unit 1 Reactor Building*		
126° in Pipe Chase	552+0	1RF396
6° in Pipe Chase	552+0	1RF397
287° in Pipe Chase	552+0	1RF398
10° in Lower Containment	552+0	1RF399
202° in Lower Containment	552+0	1RF400
211° in Pipe Chase	552+0	1RF401
68° in Pipe Chase	565+0	1RF458
10° in Upper Containment	605+0	1RF152
170° in Upper Containment	605+0	1RF153
7. Unit 1 Turbine Building		
34, 1H	568+0	1RF28
29, 1L	568+0	1RF45
26, 1L	568+0	1RF48
23, 1M	568+0	1RF50
20, 1N	568+0	1RF53
17, 1L	568+0	1RF56
18, 1H	568+0	1RF59
17, 1E	568+0	1RF62
19, 1E	568+0	1RF63
22, 1E	568+0	1RF67
26, 1E	568+0	1RF70
29, 1E	568+0	1RF73
32, 1E	568+0	1RF74
30, 1H	568+0	1RF77

(continued)

Table 16.9-4-1 (page 5 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
31, 1L	568+0	1RF78
30, 1H	594+0	1RF22
34, 1H	594+0	1RF30
29, 1L	594+0	1RF44
26, 1L	594+0	1RF47
23, 1M	594+0	1RF49
20, 1L	594+0	1RF52
16, 1J	594+0	1RF55
18, 1H/1J	594+0	1RF58
16, 1F	594+0	1RF61
19, 1E	594+0	1RF64
22, 1E	594+0	1RF66
26, 1E	594+0	1RF69
29, 1E	594+0	1RF72
32, 1E	594+0	1RF75
31, 1L	594+0	1RF79
15, 1H	619+6	1RF24
22, 1E	619+6	1RF26
34, 1H	619+6	1RF32
29, 1L	619+6	1RF43
32, 1L	619+6	1RF46
17, 1L	619+6	1RF54
20, 1L	619+6	1RF57
16, 1E	619+6	1RF60
19, 1E	619+6	1RF65
26, 1E	619+6	1RF68
29, 1E	619+6	1RF71
32, 1E	619+6	1RF76
31, 1L	619+6	1RF80
8. Unit 2 Reactor Building*		
126° in Pipe Chase	552+0	2RF396
287° in Pipe Chase	552+0	2RF398
10° in Lower Containment	552+0	2RF399
202° in Lower Containment	552+0	2RF400
211° in Pipe Chase	552+0	2RF401
6° in Pipe Chase	552+0	2RF397
68° in Pipe Chase	565+0	2RF458
10° in Upper Containment	605+0	2RF152

(continued)

Table 16.9-4-1 (page 6 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
170° in Upper Containment	605+0	2RF153
9. Unit 2 Turbine Building		
34, 2H	568+0	2RF28
29, 2L	568+0	2RF45
26, 2L	568+0	2RF48
23, 2M	568+0	2RF50
20, 2N	568+0	2RF53
17, 2L/2K	568+0	2RF56
18, 2H/2J	568+0	2RF59
17, 2E	568+0	2RF62
19, 2E	568+0	2RF63
22, 2E	568+0	2RF67
26, 2E	568+0	2RF70
29, 2E	568+0	2RF73
32, 2E	568+0	2RF74
30, 2H	568+0	2RF77
31, 2L	568+0	2RF78
30, 2H	594+0	2RF22
34, 2H	594+0	2RF30
29, 2L	594+0	2RF44
26, 2L	594+0	2RF47
23, 2M	594+0	2RF49
20, 2L	594+0	2RF52
16, 2J	594+0	2RF55
18, 2H	594+0	2RF58
16, 2F	594+0	2RF61
19, 2E	594+0	2RF64
22, 2E	594+0	2RF66
26, 2E	594+0	2RF69
29, 2E	594+0	2RF72
32, 2E	594+0	2RF75
31, 2L	594+0	2RF79
15, 2H	619+6	2RF24
22, 2E	619+6	2RF26
34, 2H	619+6	2RF32
29, 2L	619+6	2RF43
26, 2L	619+6	2RF46
17, 2L	619+6	2RF54
20, 2L	619+6	2RF57

(continued)

Table 16.9-4-1 (page 7 of 7)

Fire Hose Stations

LOCATION	ELEVATION	HOSE RACK NUMBER
16, 2E	619+6	2RF60
19, 2E	619+6	2RF65
26, 2E	619+6	2RF68
29, 2E	619+6	2RF71
32, 2E	619+6	2RF76
31, 2L	619+6	2RF80

*The containment Fire Hose Station headers are normally isolated for flood protection reasons and are exempt from Testing Requirement 16.9-4-4.

BASES

The FUNCTIONALITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The Fire Suppression System consists of the water supply/distribution system, sprinkler systems, fire hose stations, fire hydrants, and CO₂ systems. The collective capability of the Fire Suppression Systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility Fire Protection Program.

The alignment of the Fire Suppression System during Inservice Valve Testing (Containment Valve Injection Water System and stroke time testing) for RF389B results in the isolation of some of the required hose stations listed in Table 16.9-4-1. The flow path to the isolated hose stations can be restored using a few simple operator actions. The Inservice Valve Test alignments, the staging of personnel, and associated operator actions to reestablish a flow path are controlled by station procedures.

The location of the required equipment at the Fire Hose Station and the physical condition of the fire hose are critical to fire brigade operations. The option of increasing or decreasing the frequency of the fire hose inspections allows the ability to optimize plant operational resources. Should an adverse trend develop with Fire Hose Station equipment or fire hose condition, the frequency of the inspection shall be increased. Similarly, if the Fire Hose Station equipment or fire hose condition trends are positive, the frequency of verification could be decreased. Through programmed trending of Fire Hose Station inspections, Fire Hose Stations will be maintained at predetermined reliability standards. The Fire Protection Engineer is responsible for trending and determining inspection frequencies based on the following:

Initially the frequency shall be monthly.

Annually review the results of the completed Fire Hose Station inspection procedure.

- If the results demonstrate that the Fire Hose Stations are found acceptable at least 99% of the time, the frequency of conducting the Fire Hose Station inspection may be decreased from monthly to quarterly or quarterly to semiannually or semiannually to annually as applicable. The frequency shall not be extended beyond annually (plus grace period).
- If the results demonstrate that the Fire Hose Stations are not found acceptable at least 99% of the time, the frequency of conducting the Fire Hose Station inspections shall be increased from annually to semiannually or semiannually to quarterly or quarterly to monthly as

BASES (continued)

applicable. The verification need not be conducted more often than monthly.

The SSF, LPSW Intake, Reactor Buildings, Turbine Buildings and Service Building fire hose stations were added as result of transition to the NFPA 805 fire protection licensing basis. NFPA 805 Chapter 3, Section 3.6.1 states that all power block buildings shall have a standpipe and hose system installed.

In the event that portions of the Fire Suppression Systems are non-functional, alternate backup fire fighting equipment is required to be made available in the affected areas until the non-functional equipment is restored to service. When the non-functional fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the non-functional equipment is the primary means of fire suppression.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of the Catawba Renewed Facility Operating License Conditions 2.C.(5).

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba UFSAR, Section 18.2.8.
5. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.12.1.
6. RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements.
7. Catawba Renewed Facility Operating License Conditions 2.C.(5).

16.9 AUXILIARY SYSTEMS

16.9-5 Fire Rated Assemblies

COMMITMENT All required Fire Rated Assemblies (walls, floors/ceilings, cable enclosures and other fire barriers) and all sealing devices in fire rated assembly penetrations (fire doors, fire dampers, and penetration seals) shall be FUNCTIONAL.

APPLICABILITY: At all times.

-----NOTE-----

Non-functional or breached fire barrier features (walls, floors, ceilings, doors, dampers, and penetration seals) in the diesel generator rooms and the auxiliary feedwater pump rooms may affect CO₂ System FUNCTIONALITY. See SLC 16.9-3, "CO₂ Systems".

REMEDIAL ACTIONS

IF the required Fire Rated Assembly sealing device is a Fire Door, see Table 16.9-5-1

IF the required Fire Rated Assembly sealing device is a Fire Damper see Table 16.9-5-2

IF required Fire Rated Assembly is a Fire Barrier or Penetration Seal:

1. Identify the location of the impaired fire protection feature by elevation, column, and building
2. Refer to CN-1209-10 series drawings to identify the Fire Area on both sides of the impaired feature
3. IF either of the Fire Areas is identified as High Safety Significant (HSS) (see Table 16.9-5-3) then implement the REQUIRED ACTION **CONDITION A**
4. IF the Fire Areas are not HSS, then identify the associated shutdown trains/methods of the Fire Areas on each side of the barrier using Table 16.9-5-4 and implement the REQUIRED ACTION as identified in the following Chart:

Shutdown Train (Side 1 & Side 2)	A	B	SSS	A or B	A and B
A	CONDITION C	CONDITION B	CONDITION B	CONDITION C	CONDITION B
B	CONDITION B	CONDITION C	CONDITION B	CONDITION C	CONDITION B
SSS	CONDITION B	CONDITION B	CONDITION C	CONDITION B	CONDITION B
A or B	CONDITION C	CONDITION C	CONDITION B	CONDITION C	CONDITION B
A and B	CONDITION B	CONDITION B	CONDITION B	CONDITION B	CONDITION C

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A. One or more HSS* required Fire Rated Assemblies is non-functional.</p>	<p>A.1 Establish a continuous fire watch on at least one side of the assembly.</p> <p><u>OR</u></p>	<p>1 hour</p>
	<p>A.2.1 Verify at least one side of the assembly has FUNCTIONAL fire detection instrumentation.</p> <p><u>AND</u></p>	<p>1 hour</p>
	<p>A.2.2 Establish an hourly fire watch patrol on at least one side of the assembly.</p> <p><u>OR</u></p>	<p>1 hour</p>
	<p>A.3 Complete an evaluation as permitted by NRC RIS 2005-07 to institute required action(s).</p>	<p>Prior to terminating Required Action A.1 or A.2</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One or more LSS** required Fire Rated Assemblies is non-functional.</p>	<p>B.1 Establish an hourly fire watch on at least one side of the assembly.</p>	<p>1 hour</p>
	<p><u>OR</u></p>	
	<p>B.2.1 Verify at least one side of the assembly has FUNCTIONAL fire detection instrumentation.</p>	<p>1 hour</p>
	<p><u>AND</u></p>	
	<p>B.2.2 Establish a once per shift fire watch patrol on at least one side of the assembly.</p>	<p>1 hour</p>
	<p><u>OR</u></p>	
	<p>B.3 Complete an evaluation as permitted by NRC RIS 2005-07 to institute required action(s).</p>	<p>Prior to terminating Required Action B.1 or B.2</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. One or more DID*** required Fire Rated Assemblies is non-functional.</p>	<p>C.1 Establish a once per shift fire watch on at least one side of the assembly.</p>	<p>1 hour</p>
	<p><u>OR</u></p>	
	<p>C.2 Verify at least one side of the assembly has FUNCTIONAL fire detection instrumentation.</p>	<p>1 hour</p>
	<p><u>OR</u></p>	
	<p>C.3 Complete an evaluation as permitted by NRC RIS 2005-07 to institute required action(s).</p>	<p>Prior to terminating Required Action C.1</p>

*High Safety Significant (HSS) Fire Areas containing required Fire Rated Assemblies are defined in Table 16.9-5-3.

**Low Safety Significant (LSS) Fire Areas containing required Fire Rated Assemblies are defined as those areas with a boundary between redundant shutdown trains.

***Defense-in-Depth (DID) Fire Areas containing required Fire Rated Assemblies are defined as analysis compartment boundaries or PRA compartment boundaries that do not meet the HSS or LSS definitions.

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-5-1 Verify each HSS and LSS interior unlocked fire door is closed.	24 hours
TR 16.9-5-2 Verify each HSS and LSS locked closed fire door is closed.	7 days
TR 16.9-5-3 Perform an inspection and functional test of the release and closing mechanism and latches for each swinging fire door shown in Table 16.9-5-1.	6 months
TR 16.9-5-4 Perform a visual inspection of the exposed surfaces of each required Fire Rated Assembly.	18 months
<p>TR 16.9-5-5 -----NOTE----- Any abnormal changes or degradation shall be identified and resolved via the corrective action program. Based on the investigation results, additional dampers may be selected for inspection. Samples will be grouped by unit, system, and train and shall be selected such that each damper is inspected every 15 years.</p> <p>----- Perform a visual inspection of fire dampers in each HSS and LSS required Fire Rated Assembly.</p>	<p>18 months, in accordance with the predefined inspection schedule</p>

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
<p>TR 16.9-5-6 -----NOTE----- Any abnormal changes or degradation shall be identified and resolved via the corrective action program. Based on the investigation results, additional Fire Rated Assemblies may be selected for inspection. Samples shall be selected such that each Fire Rated Assembly is inspected every 15 years.</p> <p>-----</p> <p>Perform a visual inspection of penetration seals in each HSS AND LSS required Fire Rated Assembly.</p>	<p>18 months, in accordance with the predefined inspection schedule</p>
<p>TR 16.9-5-7 Perform an inspection and functional test of the automatic hold open, release and closing mechanism for each rolling fire door shown in Table 16.9-5-1.</p>	<p>18 Months</p>

Table 16.9-5-1
Required Fire Doors

DOOR NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
AX500F	AUX	56, FF	522+0	1/4	DID	C
AX214A	AUX	54-55, FF-GG	543+0	1/4	DID	C
AX214B	AUX	58-59, FF-GG	543+0	1/4	DID	C
AX217D	AUX	52-53, BB	543+0	3/34	LSS	B
AX217F ⁽¹⁾	AUX	51, AA-BB	543+0	3/40	LSS	B
AX217G	AUX	52-53, BB	543+0	3/32	LSS	B
AX227D	AUX	54-55, MM-NN	543+0	4/22	DID	C
AX227E	AUX	59-60, MM-NN	543+0	4/22	DID	C
AX228A	AUX	56-57, EE	543+0	4/9	DID	C
AX228B	AUX	57-58, EE	543+0	4/10	DID	C
AX248	AUX	57-58, QQ	543+0	4/ASB	LSS	B
AX260B	AUX	61-62, BB-CC	543+0	2/36	LSS	B
AX260F ⁽¹⁾	AUX	62, AA-BB	543+0	2/39	LSS	B
AX260G	AUX	61-62, BB-CC	543+0	2/31	LSS	B
AX260H	AUX	61-62, BB-CC	543+0	2/33	LSS	B
T527#1	AUX	52-53, BB-CC	543+0	3/37	LSS	B
AX202	AUX	51, NN	543+0	4/STAIR	DID	C
AX253A	AUX	63, NN	543+0	4/STAIR	DID	C
AX227A	AUX	59, FF-GG	543+0	4/STAIR	DID	C
AX260E	AUX	52, CC	543+0	3/STAIR	DID	C
AX516M	AUX	62, CC	543+0	2/STAIR	DID	C
AX354A	AUX	55, DD-EE	554+0	22/45	LSS	B
AX354B	AUX	59, DD-EE	554+0	22/46	LSS	B
AX418	AUX	57, BB	554+0	9/10	DID	C
AX419	AUX	57, DD-EE	554+0	9/10	DID	C
AX420A	AUX	59, DD-EE	554+0	9/46	LSS	B
AX421A	AUX	55, DD-EE	554+0	10/45	LSS	B
S102A	AUX	53-54, AA	554+0	10/SRV	LSS	B
AX302	AUX	41, CC-DD	556+0	25/41	DID	C
AX304	AUX	41, AA-BB	556+0	26/42	DID	C
AX306	AUX	73, DD-EE	556+0	27/43	DID	C
AX308	AUX	73, BB-CC	556+0	28/44	DID	C
AX348B	AUX	54-55, MM-NN	560+0	11/22	DID	C
AX348C	AUX	53-54, HH	560+0	4/11	DID	C
AX348D	AUX	59-60, MM-NN	560+0	11/22	DID	C
AX348E	AUX	60-61, HH	560+0	4/11	DID	C
AX352B	AUX	53, CC-DD	560+0	6/STAIR	HSS	A
AX352C	AUX	53, CC-DD	560+0	10/STAIR	DID	C
AX352D	AUX	46-47, BB-CC	560+0	6/RB1	HSS	A
AX353	AUX	45, BB	560+0	6/8	HSS	A
AX353B	AUX	45, AA-BB	560+0	8/41	LSS	B
AX353C	AUX	45, AA-BB	560+0	8/42	DID	C

(continued)

Table 16.9-5-1

Required Fire Doors

DOOR NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
AX393B	AUX	61, CC-DD	560+0	9/STAIR	DID	C
AX393C	AUX	61, CC-DD	560+0	5/STAIR	DID	C
AX393D	AUX	67-68, BB-CC	560+0	5/RB2	LSS	B
AX394	AUX	69, BB	560+0	5/7	DID	C
AX394B	AUX	69, AA-BB	560+0	7/43	LSS	B
AX394C	AUX	69, AA-BB	560+0	7/44	DID	C
AX395	AUX	61, AA-BB	560+0	7/9	LSS	B
AX396	AUX	53, AA-BB	560+0	8/10	LSS	B
AX415	AUX	45-46, CC-DD	560+0	6/RB1	HSS	A
AX416	AUX	68-69, CC-DD	560+0	5/RB2	LSS	B
AX417	AUX	57, QQ	560+0	11/ASB	LSS	B
AX313D	AUX	51, NN	560+0	11/STAIR	DID	C
AX388B	AUX	63, NN	560+0	11/STAIR	DID	C
AX348	AUX	59, FF-GG	560+0	11/STAIR	DID	C
AX355A	AUX	53-54, FF	568+0	4/11	DID	C
AX355D	AUX	60, FF	568+0	4/11	DID	C
AX355E	AUX	60, FF	568+0	11/STAIR	DID	C
AX515	AUX	54, BB	574+0	17/45	HSS	A
AX516	AUX	56-57, DD	574+0	14/45	HSS	A
AX516A	AUX	57-58, DD	574+0	16/46	HSS	A
AX516K	AUX	57, AA-BB	574+0	16/17	HSS	A
AX517A	AUX	53-54, DD-EE	574+0	22/45	LSS	B
AX517B	AUX	60-61, DD-EE	574+0	22/46	LSS	B
AX517C	AUX	57, DD-EE	574+0	45/46	DID	C
AX517D	AUX	57, DD-EE	574+0	9/46	LSS	B
AX517E	AUX	56-57, DD-EE	574+0	10/46	LSS	B
AX518	AUX	60, BB	574+0	16/46	HSS	A
S303	SRV	36-37, 1N	574+0	45/SRV	DID	C
S303C	SRV	36-37, V	574+0	45/SRV	DID	C
S304A	AUX	60, AA	574+0	46/SRV	DID	C
AX500H	AUX	54-55, MM-NN	577+0	18/22	DID	C
AX500K	AUX	53-54, HH-GG	577+0	4/18	DID	C
AX500L	AUX	59-60, MM-NN	577+0	18/22	DID	C
AX500N	AUX	60-61, HH-GG	577+0	4/18	DID	C
AX513B	AUX	53, CC-DD	577+0	13/STAIR	HSS	A
AX514	AUX	45, BB	577+0	13/15	HSS	A
AX514B	AUX	45-46, AA-BB	577+0	6/13	HSS	A
AX517	AUX	57, EE	577+0	9/18	DID	C
AX525	AUX	55-56, QQ	577+0	18/ASB	LSS	B
AX525B	AUX	56, QQ	577+0	18/ASB	LSS	B
AX526D	AUX	58, QQ	577+0	18/ASB	LSS	B
A314#3	AUX	61, CC-DD	577+0	12/STAIR	HSS	A
AX533C	AUX	61, CC-DD	577+0	46/STAIR	DID	C
AX534	AUX	69, BB	577+0	12/14	HSS	A

(continued)

Table 16.9-5-1

Required Fire Doors

DOOR NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
AX534B	AUX	68-69, AA-BB	577+0	7/14	HSS	A
AX535A	AUX	61, AA-BB	577+0	14/46	HSS	A
AX536	AUX	53, AA-BB	577+0	15/45	HSS	A
AX656	AUX	53, CC-DD	577+0	45/STAIR	DID	C
AX500P	AUX	51, NN	577+0	18/STAIR	DID	C
AX500S	AUX	63, NN	577+0	18/STAIR	DID	C
AX338A	AUX	60, FF-GG	577+0	18/STAIR	DID	C
AX602	AUX	52, UU-VV	594+0	24/ASB	DID	C
AX627	AUX	62, UU-VV	594+0	23/ASB	DID	C
AX630	AUX	58, QQ	594+0	22/ASB	LSS	B
AX632	AUX	57, QQ	594+0	22/ASB	LSS	B
AX635	AUX	60-61, QQ	594+0	22/ASB	LSS	B
AX635E	AUX	53-54, QQ	594+0	22/ASB	LSS	B
AX635F	AUX	53-54, QQ	594+0	22/ASB	LSS	B
AX655	AUX	62-63, DD	594+0	19/48	LSS	B
AX656C	AUX	61, CC-DD	594+0	19/22	LSS	B
AX657	AUX	60-61, CC	594+0	19/22	LSS	B
AX657A ⁽²⁾	AUX	54, BB	594+0	21/35	HSS	A
AX657B	AUX	52-53, CC-DD	594+0	20/22	LSS	B
AX657E ⁽²⁾	AUX	53, BB	594+0	21/35	HSS	A
AX657F	AUX	60, DD-EE	594+0	21/22	HSS	A
AX657G	AUX	57-58, DD-EE	594+0	21/22	HSS	A
AX657H	AUX	54, DD-EE	594+0	21/22	HSS	A
AX657J	AUX	53, BB-CC	594+0	20/21	HSS	A
AX658B	AUX	51-52, DD	594+0	20/49	LSS	B
S400	AUX	55-56, AA	594+0	21/SRV	HSS	A
S406	AUX	58-59, AA	594+0	21/SRV	HSS	A
AX635G	AUX	51, NN	594+0	22/STAIR	DID	C
AX635H	AUX	63, NN	594+0	22/STAIR	DID	C
AX654A	AUX	60, FF	594+0	22/STAIR	DID	C
AX654B	AUX	61, CC-DD	594+0	19/STAIR	DID	C
AX665B	AUX	53, CC-DD	594+0	22/STAIR	DID	C
AX700B	AUX	50-51, JJ-KK	605+10	24/RB1	LSS	B
AX700D	AUX	63-64, KK	605+10	22/23	LSS	B
AX701	AUX	50-51, JJ-KK	605+10	22/RB1	LSS	B
AX714B	AUX	63-64, JJ-KK	605+10	23/RB2	LSS	B
AX720	AUX	50-51, HH-JJ	605+10	22/RB1	LSS	B
AX721	AUX	63-64, HH-JJ	605+10	22/RB2	LSS	B
AX714C	AUX	50-51, KK	605+10	22/24	LSS	B
AX715A	AUX	63-64, JJ-KK	605+10	22/RB2	LSS	B
S211 ⁽²⁾	TB1	17, V	568+0	SRV/TB1	DID	C
S212	TB1	19, V	568+0	SRV/TB1	DID	C
S210	TB1	21, V	568+0	SRV/TB1	DID	C

(continued)

Table 16.9-5-1

Required Fire Doors

DOOR NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
S206	TB1	22, V	568+0	SRV/TB1	DID	C
S201	TB1	33, V	568+0	SRV/TB1	DID	C
SR3 ⁽³⁾	TB1	30-31, V	568+0	SRV/TB1	DID	C
S201A	TB1	27, V	568+0	SRV/TB1	DID	C
T101	TB1	31, 1K	568+0	TB1/U1 OTT	DID	C
S424	TB1	24-25, V	594+0	SRV/TB1	DID	C
S425	TB1	23, V	594+0	SRV/TB1	DID	C
S426	TB1	22, V	594+0	SRV/TB1	DID	C
SR21 ⁽³⁾	TB1	24, V	594+0	SRV/TB1	DID	C
S472	TB1	27, V	594+0	SRV/TB1	DID	C
S423	TB1	29, V	594+0	SRV/TB1	DID	C
S422	TB1	29, V	594+0	SRV/TB1	DID	C
SR7 ⁽³⁾	TB1	29-30, V	594+0	SRV/TB1	DID	C
S416	TB1	32, V	594+0	SRV/TB1	DID	C
S444	TB1	15, V	594+0	SRV/TB1	DID	C
TR4 ⁽³⁾	TB1	15-16, V	594+0	SRV/TB1	DID	C
T200A	TB1	32, 1J-1K	594+0	TB1/U1 MTOT	DID	C
S701	TB1	22, 1L	619+6	SRV/TB1	DID	C
S704	TB1	33, 1L	619+6	SRV/TB1	DID	C
S209	TB2	20, P	568+0	SRV/TB2	DID	C
S208	TB2	22, P	568+0	SRV/TB2	DID	C
SR2 ⁽³⁾	TB2	32-33, P	568+0	SRV/TB2	DID	C
S462	TB2	32, P	568+0	SRV/TB2	DID	C
SR4 ⁽³⁾	TB2	30-31, P	568+0	SRV/TB2	DID	C
S1102	TB2	27, P	568+0	SRV/TB2	DID	C
T151	TB2	31, 2K	568+0	TB2/U2 OTT	DID	C
S423E	TB2	26, P-Q	594+0	SRV/TB2	DID	C
S416A	TB2	32, P	594+0	SRV/TB2	DID	C
SR8 ⁽³⁾	TB2	29-30, P	594+0	SRV/TB2	DID	C
S422A	TB2	29, P	594+0	SRV/TB2	DID	C
S423A	TB2	29, P	594+0	SRV/TB2	DID	C
S435	TB2	24-25, P	594+0	SRV/TB2	DID	C
S436	TB2	23, P	594+0	SRV/TB2	DID	C
S437	TB2	22, P	594+0	SRV/TB2	DID	C
SR22 ⁽³⁾	TB2	24, P	594+0	SRV/TB2	DID	C
S444A	TB2	15, P	594+0	SRV/TB2	DID	C
SR16 ⁽³⁾	TB2	15-16, P	594+0	SRV/TB2	DID	C
S472A	TB2	27, P	594+0	SRV/TB2	DID	C
T250A	TB2	32, 2J-2K	594+0	TB2/U2 MTOT	DID	C
S701A	TB2	22, 2L	619+6	SRV/TB2	DID	C
S704A	TB2	33, 2L	619+6	SRV/TB2	DID	C
AX662A	NSWPS	----	600+0	29/30	LSS	B

(1) These doors are not equipped with closing mechanisms or latches and are therefore exempt from TESTING REQUIREMENT 16.9-5-3.

(2) These doors are held open with a fusible link.

(3) Rolling Door.

Table 16.9-5-2

Required Fire Dampers

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
1VA-FD001	AUX	53/GG-FF	522+0	1/4	DID	C
1VA-FD002	AUX	53/GG-HH	522+0	1/4	DID	C
1VA-FD003	AUX	55-56/GG-HH	522+0	1/4	DID	C
1VA-FD004	AUX	55-56/GG-HH	522+0	1/4	DID	C
1VA-FD005	AUX	54-55/GG-HH	522+0	1/4	DID	C
1VA-FD006	AUX	54-55/GG-HH	522+0	1/4	DID	C
1VA-FD007	AUX	53/GG-FF	522+0	1/4	DID	C
1VA-FD008	AUX	53/GG-FF	522+0	1/4	DID	C
1VA-FD009	AUX	53-54/FF-GG	522+0	1/1 (ND PUMPS)	DID	C
1VA-FD010	AUX	56-57/ GG-HH,	522+0	1/4	DID	C
1VA-FD011	AUX	56-57/FF	522+0	1/4	DID	C
1VA-FD012	AUX	51/NN-PP	543+0	11/STAIR	DID	C
1VA-FD013	AUX	54/MM	543+0	4/22	DID	C
1VA-FD014	AUX	54/MM	543+0	4/22	DID	C
1VA-FD015	AUX	54-55/MM-NN	543+0	4/22	DID	C
1VA-FD016	AUX	54-55/MM-NN	543+0	4/22	DID	C
1VA-FD017	AUX	54-55/MM-NN	543+0	4/22	DID	C
1VA-FD020	AUX	55/JJ-KK	543+0	4/4 (NV PUMPS)	DID	C
1VA-FD033	AUX	51-52/AA-BB	543+0	3/40	LSS	B
1VA-FD034	AUX	51-52/AA-BB	543+0	3/40	LSS	B
1VA-FD035	AUX	52/AA-BB	543+0	3/32	LSS	B
1VA-FD036	AUX	52-53/BB	543+0	3/32	LSS	B
1VA-FD038	AUX	52-53/BB	543+0	3/34	LSS	B
1VA-FD039	AUX	52-53/BB	543+0	3/34	LSS	B
1VA-FD040	AUX	52-53/BB	543+0	3/32	LSS	B
1VA-FD041	AUX	52-53/BB	543+0	3/32	LSS	B
1VA-FD042	AUX	53/CC	543+0	3/STAIR	DID	C
1VA-FD043	AUX	53/CC-DD	543+0	3/STAIR	DID	C
1VA-FD045	AUX	52-53/DD	560+0	3/6	HSS	A
1VA-FD046	AUX	52-53/CC-DD	577+0	6/13	HSS	A
1VA-FD047	AUX	52-53/CC-DD	577+0	6/13	HSS	A
1VA-FD048	AUX	54/MM-NN	560+0	11/22	DID	C
1VA-FD049	AUX	54/MM	560+0	11/22	DID	C
1VA-FD050	AUX	54-55/MM	560+0	4/22	DID	C
1VA-FD051	AUX	54-55/MM	560+0	4/22	DID	C
1VA-FD052	AUX	55/MM-NN	560+0	11/22	DID	C
1VA-FD053	AUX	55/MM	560+0	11/22	DID	C
1VA-FD054	AUX	53/GG-HH	560+0	4/11	DID	C
1VA-FD055	AUX	53/GG-HH	560+0	4/11	DID	C
1VA-FD056	AUX	53/KK	560+0	4/11	DID	C
1VA-FD057	AUX	53/GG-HH	560+0	4/11	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
1VA-FD058	AUX	53-54/HH	560+0	4/11	DID	C
1VA-FD059	AUX	54/GG-HH	560+0	4/11	DID	C
1VA-FD060	AUX	54/HH	560+0	4/11	DID	C
1VA-FD061	AUX	56-57/QQ	577+0	18/ASB	LSS	B
1VA-FD062	AUX	55-56/QQ	577+0	18/ASB	LSS	B
1VA-FD063	AUX	55/MM-NN	577+0	18/22	DID	C
1VA-FD064	AUX	55/MM	577+0	18/22	DID	C
1VA-FD065	AUX	54/MM	577+0	18/22	DID	C
1VA-FD066	AUX	54/MM	577+0	18/22	DID	C
1VA-FD067	AUX	54/HH	577+0	4/18	DID	C
1VA-FD068	AUX	53-54/HH	577+0	4/18	DID	C
1VA-FD069	AUX	54/GG-HH	577+0	4/18	DID	C
1VA-FD070	AUX	53-54/HH	577+0	4/18	DID	C
1VA-FD071	AUX	53-54/HH	577+0	4/18	DID	C
1VA-FD072	AUX	53/HH	577+0	4/18	DID	C
1VA-FD073	AUX	53/HH	577+0	4/18	DID	C
1VA-FD074	AUX	53/GG-HH	577+0	4/18	DID	C
1VA-FD075	AUX	53-54/KK-LL	594+0	18/22	DID	C
1VA-FD076	AUX	53-54/KK-LL	594+0	18/22	DID	C
1VA-FD078	AUX	57/NN	594+0	22/STAIR	DID	C
1VA-FD087	AUX	55-56/QQ	594+0	22/ASB	LSS	B
1VA-FD088	AUX	53-54/QQ	594+0	22/ASB	LSS	B
1VA-FD133	AUX	53/CC-DD	594+0	22/STAIR	DID	C
1VA-FD139	AUX	51-52/DD	543+0	3/4	DID	C
1VA-FD140	AUX	53-54/FF-GG	560+0	4/11	DID	C
1VA-FD141	AUX	53-54/FF-GG	560+0	4/11	DID	C
1VA-FD142	AUX	53/GG	560+0	4/11	DID	C
1VA-FD143	AUX	53/JJ-HH	560+0	4/11	DID	C
1VA-FD144	AUX	53/KK	560+0	4/11	DID	C
1VA-FD145	AUX	51/KK	560+0	11/18	DID	C
1VA-FD146	AUX	51/KK	560+0	11/18	DID	C
1VA-FD147	AUX	52/MM	560+0	11/18	DID	C
1VA-FD148	AUX	52/MM-NN	560+0	4/11	DID	C
1VA-FD149	AUX	52-53/DD	560+0	3/6	HSS	A
1VA-FD150	AUX	52-53/DD	560+0	3/6	HSS	A
1VA-FD152	AUX	52-53/BB-CC	543+0	3/37	LSS	B
1VA-FD153	AUX	52-53/CC	543+0	3/37	LSS	B
1VA-FD154	AUX	53-54/GG-HH	594+0	4/22	DID	C
1VA-FD155	AUX	53-54/GG-HH	594+0	4/22	DID	C
1VA-FD159	AUX	49-50/AA-BB	543+0	CO2	HSS	A
1VA-FD160	AUX	50-51/AA-BB	543+0	CO2	HSS	A
2VA-FD001	AUX	61/GG-FF	522+0	1/4	DID	C
2VA-FD002	AUX	61/GG-FF	522+0	1/4	DID	C
2VA-FD003	AUX	60-61/FF-GG	522+0	1/1 (ND PUMPS)	DID	C
2VA-FD004	AUX	61/GG-FF	522+0	1/4	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
2VA-FD005	AUX	60-61/GG-HH	522+0	1/4	DID	C
2VA-FD006	AUX	59-60/GG-HH	522+0	1/4	DID	C
2VA-FD007	AUX	59-60/GG-HH	522+0	1/4	DID	C
2VA-FD008	AUX	58-59/GG-HH	522+0	1/4	DID	C
2VA-FD009	AUX	58-59/GG-HH	522+0	1/4	DID	C
2VA-FD010	AUX	57-58/GG-HH	522+0	1/4	DID	C
2VA-FD011	AUX	57-58/FF	522+0	1/4	DID	C
2VA-FD012	AUX	59-60/MM-NN	543+0	4/22	DID	C
2VA-FD013	AUX	59/MM	543+0	4/22	DID	C
2VA-FD014	AUX	59/MM	543+0	4/22	DID	C
2VA-FD015	AUX	59-60/MM-NN	543+0	4/22	DID	C
2VA-FD020	AUX	63/NN	534+0	4/STAIR	DID	C
2VA-FD023	AUX	59/JJ-KK	543+0	4/4 (NV PUMPS)	DID	C
2VA-FD036	AUX	61-62/DD	560+0	2/5	LSS	B
2VA-FD037	AUX	61-62/CC-DD	577+0	5/12	HSS	A
2VA-FD038	AUX	61-62/CC-DD	577+0	5/12	HSS	A
2VA-FD040	AUX	62-63/AA-BB	543+0	2/39	LSS	B
2VA-FD041	AUX	62-63/AA-BB	543+0	2/39	LSS	B
2VA-FD042	AUX	62/AA-BB	543+0	2/31	LSS	B
2VA-FD043	AUX	61-62/BB	543+0	2/31	LSS	B
2VA-FD045	AUX	61/CC	543+0	2/STAIR	DID	C
2VA-FD046	AUX	61/CC-DD	543+0	2/STAIR	DID	C
2VA-FD048	AUX	61-62/BB	543+0	2/33	LSS	B
2VA-FD049	AUX	61-62/BB	543+0	2/33	LSS	B
2VA-FD050	AUX	61-62/BB	543+0	2/31	LSS	B
2VA-FD051	AUX	61-62/BB	543+0	2/31	LSS	B
2VA-FD053	AUX	60/MM	560+0	11/22	DID	C
2VA-FD054	AUX	59/MM-NN	560+0	11/22	DID	C
2VA-FD056	AUX	60/MM-NN	560+0	11/22	DID	C
2VA-FD057	AUX	59-60/MM	560+0	11/22	DID	C
2VA-FD058	AUX	59-60/MM	560+0	4/22	DID	C
2VA-FD059	AUX	60-61/HH	560+0	4/11	DID	C
2VA-FD060	AUX	61/HH-JJ	560+0	4/11	DID	C
2VA-FD061	AUX	60-61/GG-HH	560+0	4/11	DID	C
2VA-FD062	AUX	61/GG-HH	560+0	4/11	DID	C
2VA-FD063	AUX	61/GG-HH	560+0	4/11	DID	C
2VA-FD064	AUX	60-61/GG-HH	560+0	4/11	DID	C
2VA-FD065	AUX	61/HH	560+0	4/11	DID	C
2VA-FD069	AUX	58-59/QQ	577+0	18/ASB	LSS	B
2VA-FD070	AUX	59-60/QQ	577+0	18/ASB	LSS	B
2VA-FD071	AUX	59-60/MM-NN	577+0	18/22	DID	C
2VA-FD072	AUX	59-60/MM	577+0	18/22	DID	C
2VA-FD073	AUX	60/MM	577+0	18/22	DID	C
2VA-FD074	AUX	60/MM	577+0	18/22	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
2VA-FD075	AUX	60/HH	577+0	4/22	DID	C
2VA-FD076	AUX	60/HH	577+0	4/22	DID	C
2VA-FD077	AUX	60-61/HH	577+0	4/22	DID	C
2VA-FD078	AUX	60-61/HH	577+0	4/22	DID	C
2VA-FD079	AUX	61/HH	577+0	4/22	DID	C
2VA-FD080	AUX	61/GG-HH	577+0	4/22	DID	C
2VA-FD081	AUX	61/HH	577+0	4/22	DID	C
2VA-FD083	AUX	63/NN	594+0	22/STAIR	DID	C
2VA-FD086	AUX	60/FF	594+0	22/STAIR	DID	C
2VA-FD087	AUX	59-60/QQ	594+0	22/ASB	LSS	B
2VA-FD088	AUX	60-61/QQ	594+0	22/ASB	LSS	B
2VA-FD093	AUX	58-59/QQ	594+0	22/ASB	LSS	B
2VA-FD097	AUX	61/CC-DD	594+0	22/STAIR	DID	C
2VA-FD108A	AUX	57-59/QQ	611+0	22/ASB	LSS	B
2VA-FD108B	AUX	57-59/QQ	611+0	22/ASB	LSS	B
2VA-FD114	AUX	59-60/KK-LL	594+0	18/22	DID	C
2VA-FD115	AUX	59-60/KK-LL	594+0	18/22	DID	C
2VA-FD137	AUX	60-61/FF-GG	560+0	4/18	DID	C
2VA-FD138	AUX	60-61/FF-GG	560+0	4/18	DID	C
2VA-FD139	AUX	61/GG	560+0	4/11	DID	C
2VA-FD141	AUX	62-63/DD	543+0	2/4	DID	C
2VA-FD142	AUX	60-61/KK	560+0	4/11	DID	C
2VA-FD143	AUX	62-63/KK	560+0	4/18	DID	C
2VA-FD144	AUX	63/KK	560+0	4/18	DID	C
2VA-FD145	AUX	61-62/MM-NN	560+0	4/11	DID	C
2VA-FD146	AUX	61-62/DD	560+0	2/5	LSS	B
2VA-FD147	AUX	61-62/DD	560+0	2/5	LSS	B
2VA-FD151	AUX	61-62/BB-CC	543+0	2/36	LSS	B
2VA-FD152	AUX	61-62/CC	543+0	2/36	LSS	B
2VA-FD153	AUX	60-61/GG-HH	594+0	4/22	DID	C
2VA-FD154	AUX	60-61/GG-HH	594+0	4/22	DID	C
2VA-FD157	AUX	63-64/AA-BB	543+0	CO2	HSS	A
2VA-FD158	AUX	64-65/AA-BB	543+0	CO2	HSS	A
2VA-FD160	AUX	57-58/QQ	543+0	4/ASB	LSS	B
2VA-FD161	AUX	57-58/QQ	543+0	4/ASB	LSS	B
0BRS-FD001	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRS-FD010	AUX	57/DD-EE	554+0	9/10	DID	C
0BRS-FD019	AUX	59/DD-EE	554+0	9/22	DID	C
0BRX-FD001A	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001B	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001C	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001D	AUX	54-55/DD-EE	554+0	10/22	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
0BRX-FD001E	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001F	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001G	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD001H	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD002	AUX	54-55/DD-EE	554+0	10/22	DID	C
0BRX-FD009	AUX	57/AA-BB	554+0	9/10	DID	C
0BRX-FD010	AUX	57/AA-BB	554+0	9/10	DID	C
0BRX-FD011	AUX	57/BB-CC	554+0	9/10	DID	C
0BRX-FD012	AUX	57/CC-DD	554+0	9/10	DID	C
0BRX-FD013	AUX	57/CC-DD	554+0	9/10	DID	C
0BRX-FD014	AUX	57/DD-EE	554+0	9/10	DID	C
0BRX-FD021	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022A	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022B	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022C	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022D	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022E	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022F	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022G	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD022H	AUX	60/DD-EE	554+0	9/22	DID	C
0BRX-FD023	AUX	57/BB-CC	554+0	9/10	DID	C
1CRA-FD005A	AUX	54-55/DD-EE	594+0	21/22	HSS	A
1CRA-FD005B	AUX	54-55/DD-EE	594+0	21/22	HSS	A
1CRA-FD008	AUX	54/AA	594+0	21/35	HSS	A
1CRA-FD009	AUX	53-54/CC-DD	594+0	22/STAIR	DID	C
1CRA-FD010	AUX	53-54/CC	594+0	21/STAIR	HSS	A
1CRA-FD011	AUX	53/AA-BB	594+0	20/35	DID	C
1CRA-FD012	AUX	53/BB-CC	594+0	20/21	HSS	A
1CRA-FD013	AUX	52/CC-DD	594+0	20/22	LSS	B
1CRA-FD016	AUX	54-55/DD-EE	574+0	22/45	LSS	B
1CRA-FD017	AUX	54-55/DD	574+0	17/45	HSS	A
1CRA-FD018	AUX	54-55/DD	574+0	17/45	HSS	A

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
1CRA-FD019	AUX	54/AA-BB	574+0	17/45	HSS	A
1CRA-FD020	AUX	57/CC-DD	574+0	16/17	HSS	A
1CRA-FD021	AUX	53-54/DD-EE	574+0	22/45	LSS	B
1CRA-FD022	AUX	55-56/DD	574+0	17/45	HSS	A
1CRA-FD023	AUX	56-57/DD	574+0	17/45	HSS	A
1CRA-FD024A	AUX	57/DD-EE	574+0	45/46	DID	C
1CRA-FD024B	AUX	57/DD-EE	574+0	45/46	DID	C
1CRA-FD025A	AUX	54-55/DD-EE	574+0	22/45	LSS	B
1CRA-FD025B	AUX	54-55/DD-EE	574+0	22/45	LSS	B
1CRA-FD026	AUX	54-55/EE	577+0	18/22	DID	C
1CRA-FD028	AUX	53-54/EE	577+0	18/22	DID	C
1CRA-FD029	AUX	54-55/EE	568+0	11/22	DID	C
1CRA-FD030	AUX	54-55/EE	568+0	11/22	DID	C
1CRA-FD039	AUX	57/EE-FF	577+0	18/18 (KC PUMPS)	DID	C
1CR-FD001	AUX	55-56/DD-EE	594+0	21/22	HSS	A
1CR-FD002	AUX	55-56/DD-EE	594+0	21/22	HSS	A
1CR-FD003	AUX	54/AA-BB	594+0	21/35	HSS	A
1CR-FD004	AUX	53-54/BB	594+0	21/35	HSS	A
1CR-FD005	AUX	53-54/BB	594+0	21/35	HSS	A
1CR-FD007	AUX	51/CC-DD	594+0	13/20	HSS	A
2CRA-FD005A	AUX	59-60/DD-EE	594+0	21/22	HSS	A
2CRA-FD005B	AUX	59-60/DD-EE	594+0	21/22	HSS	A
2CRA-FD008	AUX	60/AA-BB	594+0	19/21	HSS	A
2CRA-FD009	AUX	60-61/CC	594+0	19/22	LSS	B
2CRA-FD012	AUX	61/CC-DD	594+0	19/22	LSS	B
2CRA-FD015	AUX	59-60/DD-EE	574+0	22/46	LSS	B
2CRA-FD016	AUX	59-60/DD	574+0	16/46	HSS	A
2CRA-FD017	AUX	59-60/DD	574+0	16/46	HSS	A
2CRA-FD018	AUX	60/AA-BB	574+0	16/46	HSS	A
2CRA-FD019	AUX	58-59/DD	574+0	16/46	HSS	A
2CRA-FD020	AUX	57-58/DD	574+0	16/46	HSS	A
2CRA-FD021	AUX	60-61/DD-EE	574+0	22/46	LSS	B
2CRA-FD022A	AUX	59-60/DD-EE	574+0	22/46	LSS	B
2CRA-FD022B	AUX	59-60/DD-EE	574+0	22/46	LSS	B
2CRA-FD023	AUX	59-60/EE	577+0	18/22	DID	C
2CRA-FD025	AUX	60-61/EE	577+0	18/22	DID	C
2CRA-FD026	AUX	59-60/EE	568+0	11/22	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
2CRA-FD027	AUX	59-60/EE	568+0	11/22	DID	C
2CR-FD001	AUX	58-59/DD-EE	594+0	21/22	HSS	A
2CR-FD002	AUX	58-59/DD	594+0	21/22	HSS	A
2CR-FD003	AUX	63-64/CC	594+0	12/19	HSS	A
1VF-FD001A	AUX	51, NN-PP	605+10	22/24	LSS	B
1VF-FD001B	AUX	51, NN-PP	605+10	22/24	LSS	B
1VF-FD002A	AUX	50-51/NN-PP	631+6	24/38	DID	C
1VF-FD002B	AUX	50-51/NN-PP	631+6	24/38	DID	C
1VF-FD004	AUX	49/PP-QQ	631+6	24/38	DID	C
1VF-FD005	AUX	49-50/PP-QQ	631+6	24/38	DID	C
1VF-FD006	AUX	50-51	631+6	24/38	DID	C
1VF-FD007	AUX	50-51/KK-LL	605+10	22/24	LSS	B
1VF-FD010	AUX	50-51/KK	605+10	22/24	LSS	B
1VF-FD011	AUX	50-51/JJ-KK	631+6	22/38	LSS	B
1VF-FD013	AUX	50-51/JJ-KK	616+10	22/24	LSS	B
1VF-FD014	AUX	50-51/JJ-KK	616+10	22/24	LSS	B
2VF-FD001A	AUX	63, NN-PP	605+10	22/23	LSS	B
2VF-FD001B	AUX	63, NN-PP	605+10	22/23	LSS	B
2VF-FD002A	AUX	63-64/NN-PP	631+6	23/47	DID	C
2VF-FD002B	AUX	63-64/NN-PP	631+6	23/47	DID	C
2VF-FD004	AUX	65/PP-QQ	631+6	23/47	DID	C
2VF-FD005	AUX	64-65/PP-QQ	631+6	23/47	DID	C
2VF-FD006	AUX	63-64/PP-QQ	631+6	23/47	DID	C
2VF-FD007	AUX	63-64/KK-LL	605+10	22/23	LSS	B
2VF-FD010	AUX	63-64/KK	605+10	22/23	LSS	B
2VF-FD011	AUX	64-64/JJ-KK	631+6	22/47	LSS	B
2VF-FD013	AUX	63-64/JJ-KK	616+10	22/23	LSS	B
2VF-FD014	AUX	63-64/JJ-KK	616+10	22/23	LSS	B
1TB-FD001	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD002	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD003	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD004	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD005	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD006	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD007	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD008	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD009	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD010	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD011	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD012	TB1	21-22/V	594+0	TB1/SRV	DID	C
1TB-FD032	TB1	18-19/V	594+0	TB1/SRV	DID	C
1TB-FD038	TB1	16-17/V	594+0	TB1/SRV	DID	C
1TB-FD039	TB1	16-17/V	594+0	TB1/SRV	DID	C
1TB-FD040	TB1	16/V	594+0	TB1/SRV	DID	C
1TB-FD043	TB1	30-31/1J-1K	568+0	TB1/OTT	DID	C
1TB-FD044	TB1	32/1J-1K	594+0	TB1/MTOT	DID	C

(continued)

Table 16.9-5-2

REQUIRED FIRE DAMPERS

DAMPER NUMBER	BLDG	LOCATION	ELEVATION	FIRE AREA INTERFACE	RISK CRITERIA	REMEDIAL ACTION CONDITION
1TB-FD045	TB1	30/1J-1K	594+0	TB1/MTOT	DID	C
1TB-FD046	TB1	32/1K-1L	568+0	TB1/OTT	DID	C
2TB-FD013	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD014	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD015	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD016	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD017	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD018	TB2	21-22/P	594+0	TB2/SRV	DID	C
2TB-FD019	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD020	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD021	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD022	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD023	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD024	TB2	18-19/P	594+0	TB2/SRV	DID	C
2TB-FD031	TB2	32/2K-2L	568+0	TB2/OTT	DID	C
2TB-FD032	TB2	18/P	594+0	TB2/SRV	DID	C
2TB-FD036	TB2	16-17/P	594+0	TB2/SRV	DID	C
2TB-FD038	TB2	17-18/P	594+0	TB2/SRV	DID	C
2TB-FD039	TB2	32/2J-2K	594+0	TB2/MTOT	DID	C
2TB-FD040	TB2	30/2J-2K	594+0	TB2/MTOT	DID	C
2TB-FD041	TB2	30-31/2J/2K	568+0	TB2/OTT	DID	C
SB-FD158	SRV	18-19/V	594+0	TB1/SRV	DID	C

Table 16.9-5-3

HIGH SAFETY SIGNIFICANT (HSS) FIRE AREAS*

FIRE AREA	BLDG	ELEVATION	DESCRIPTION
6	AUX	560+0	Unit 1 Electrical Pen Room EI 560
12	AUX	577+0	Unit 2 Electrical Pen Room EI 577
13	AUX	577+0	Unit 1 Electrical Pen Room EI 577
14	AUX	577+0	Unit 2 4160V Essential Swgr Room (2ETA)
15	AUX	577+0	Unit 1 4160V Essential Swgr Room (1ETA)
16	AUX	574+0	Unit 2 Cable Room EI 574
17	AUX	574+0	Unit 1 Cable Room EI 574
21	AUX	594+0	Main Control Room EI 594

*High Safety Significant (HSS) Fire Areas are defined as the areas with HSS fire barrier features in accordance with the Catawba NFPA 805 Monitoring Program.

Table 16.9-5-4

FIRE AREAS AND SHUTDOWN TRAIN / METHOD

FIRE AREA	FIRE AREA DESCRIPTIONS	ASSURED SHUTDOWN TRAIN / METHOD
1	ND & NS Pump Room EI 522 (Common)	SSS
2	Unit 2 CA Pump Room EI 543	SSS
3	Unit 1 CA Pump Room EI 543	SSS
4	Aux Bldg. Gen Area & NV Pump Room EI 543 (Common)	SSS
5	Unit 2 Electrical Pen Room EI 560	A
6	Unit 1 Electrical Pen Room EI 560	A
7	Unit 2 4160V Essential SWGR Room EI 560	A
8	Unit 1 4160V Essential SWGR Room EI 560	A
9	Unit 2 Battery Room EI 554	SSS
10	Unit 1 Battery Room EI 554	SSS
11	Aux Bldg. Gen Area & U1 KC Pump Room EI 560 (Common)	SSS
12	Unit 2 Electrical Pen Room EI 577	B
13	Unit 1 Electrical Pen Room EI 577	B
14	Unit 2 4160V Essential SWGR Room EI 577	B
15	Unit 1 4160V Essential SWGR Room EI 577	B
16	Unit 2 Cable Room EI 574	SSS
17	Unit 1 Cable Room EI 574	SSS
18	Aux Bldg. Gen Area & U2 KC Pump Room EI 577 (Common)	SSS
19	Unit 2 Electrical Pen Room EI 594	A
20	Unit 1 Electrical Pen Room EI 594	A
21	Control Room EI 594 (Common)	SSS
22	Aux Bldg. Gen Area EI 594 (Common)	SSS
23	Unit 2 Fuel Storage Area EI 605	A
24	Unit 1 Fuel Storage Area EI 605	A
25	Diesel Generator Bldg. 1A EI 556	B
25A	Diesel Generator Bldg. 1A Stairwell	B
26	Diesel Generator Bldg. 1B EI 556	A
26B	Diesel Generator Bldg. 1B Stairwell	A
27	Diesel Generator Bldg. 2A EI 556	B
27A	Diesel Generator Bldg. 2A Stairwell	B
28	Diesel Generator Bldg. 2B EI 556	A
28B	Diesel Generator Bldg. 2B Stairwell	A
29	Train A RN Pump Structure EI 600 (Common)	B
30	Train B RN Pump Structure EI 600 (Common)	A
31	Unit 2 Train A Aux Shutdown Panel EI 543	B
32	Unit 1 Train A Aux Shutdown Panel EI 543	B
33	Unit 2 Train B Aux Shutdown Panel EI 543	A
34	Unit 1 Train B Aux Shutdown Panel EI 543	A
35	Control Room Tagout Area EI 594	A or B
36	Unit 2 Turbine Driven CA Pump Control Panel Room EI 543	B
37	Unit 1 Turbine Driven CA Pump Control Panel Room EI 543	B
38	Unit 1 Fuel Storage Area HVAC Room EI 631	A or B

(continued)

Table 16.9-5-4

FIRE AREAS AND SHUTDOWN TRAIN / METHOD

FIRE AREA	FIRE AREA DESCRIPTIONS	ASSURED SHUTDOWN TRAIN / METHOD
39	Unit 2 Turbine Driven CA Pump Pit EI 543	B
40	Unit 1 Turbine Driven CA Pump Pit EI 543	B
41	DG1A Sequencer Tunnel EI 556	B
42	DG1B Sequencer Tunnel EI 556	A
43	DG2A Sequencer Tunnel EI 556	B
44	DG2B Sequencer Tunnel EI 556	A
45	Unit 1 Cable Room Corridor EI 574	B
46	Unit 2 Cable Room Corridor EI 574	B
47	Unit 2 Fuel Storage Area HVAC Room EI 631	A or B
48	Unit 2 Interior Doghouse	A and B
49	Unit 1 Interior Doghouse	A and B
50	Unit 2 Exterior Doghouse	A and B
51	Unit 1 Exterior Doghouse	A and B
ASB	Auxiliary Service Building	A or B
RB1	Unit 1 Reactor Building	A and B
RB2	Unit 2 Reactor Building	A and B
SRV	Service Building	B
SSF	Standby Shutdown Facility	A or B
STAIR*	Stairway	See Note
TB1	Unit 1 Turbine Building	A or B
TB2	Unit 2 Turbine Building	A or B
YRD**	Yard Area	A or B

* IF the barrier in a stairway is adjacent to a HSS Fire Area (see Table 16.9-5-3), enter CONDITION A; otherwise enter CONDITION C.

** Exterior walls that interface with the YRD do not require entry into a CONDITION statement and therefore do not have a REQUIRED ACTION.

A = A TRAIN

B = B TRAIN

SSS = STANDBY SHUTDOWN SYSTEM

BASES

The functional integrity of the Fire Rated Assemblies and associated sealing devices ensures that fires will be confined or adequately retarded so as not to spread between fire areas/compartments.

The fire barriers and associated penetration seals are passive elements in the facility fire protection program and are subject to periodic inspections.

Risk-informed insights from the Fire PRA process can apply to compensatory actions. The safety significance of the fire area can provide relief for required compensatory actions. In addition, the presence of functional fire detection can reduce the required compensatory actions. Functional fire detection in the area provides early warning of a fire for fire brigade response. Fire detection can provide a compensatory action equivalent to or better than fire watch.

Fire barrier penetration seals, including cable/pipe penetration seals, fire doors, and fire dampers, are considered FUNCTIONAL when the visually observed condition indicates no abnormal change in appearance or abnormal degradation. An evaluation is performed to determine the cause of any identified fire barrier penetration seal abnormal change in appearance or abnormal degradation and the effect of this change on the ability of the fire barrier penetration seal to perform its function. Based on this evaluation additional inspections may be performed.

During periods of time when a barrier is not FUNCTIONAL, either:

- (1) Perform the recommended fire watch in accordance with the criteria in the remedial actions, or
- (2) a licensee may choose to implement a different required action or a combination of actions (e.g., additional administrative controls, operator briefings, temporary procedures, interim shutdown strategies, operator manual actions, temporary fire barriers, temporary detection or suppression systems). Such a change must be made to the approved Fire Protection Plan (FPP). However, the licensee must complete a documented evaluation of the impact of the proposed required action to the FPP. The evaluation must demonstrate that the required actions would not adversely affect the ability to achieve and maintain safe shutdown in the event of a fire. Any change to the FPP must maintain compliance with the General Design Criteria and 10 CFR 50.48(a).

The evaluation of the required action should incorporate risk insights regarding the location, quantity, and type of combustible material in the fire area; the presence of ignition sources and their likelihood of occurrence; the automatic fire suppression and the fire detection capability in the fire area; the manual fire suppression capability in the fire area; and the human error probability where applicable.

BASES (continued)

The expectation is to promptly complete the corrective action at the first available opportunity and eliminate the reliance on the required action.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of Section 2.C.(5) of the Catawba Renewed Facility Operating Licenses.

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba UFSAR, Section 18.2.8.
5. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.12.2.
6. NRC Regulatory Issue Summary 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements, April 19, 2005.
7. Catawba Renewed Facility Operating License Conditions 2.C.(5).
8. CNC-1435.00-00-0084, Catawba NFPA 805 Monitoring Program.
9. CNC-1435.00-00-0044, Fire Protection Nuclear Safety Capability Assessment.
10. CN-1209.10 series drawings.

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 FUNCTIONAL.

APPLICABILITY: At all times.

-----NOTE-----

See Table 16.9-6-1 for Risk Criteria

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. All fire detection instruments in all fire zones non-functional due to fire detection system failure.	A.1 Establish roving fire watch in accordance with fire detection system operating procedure.	1 hour
	<u>AND</u>	
	A.2 Restore the non-functional fire detection system to FUNCTIONAL status.	72 hours
	<u>OR</u>	
	A.3 If the non-functional fire detection system cannot be restored to FUNCTIONAL status within 72 hours, enter Conditions B through E as applicable.	72 hours
B. One or more of the fire detection instruments in a HSS* EFA zone is non-functional.	B.1 Establish a continuous fire watch.	1 hour
	<u>OR</u>	
		(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. (continued)</p>	<p>B.2.1 Verify affected area has FUNCTIONAL full area automatic fire suppression.</p> <p><u>AND</u></p> <p>B.2.2 Establish an hourly fire watch patrol.</p> <p><u>OR</u></p> <p>B.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement required action(s).</p>	<p>1 hour</p> <p>1 hour</p> <p>Prior to terminating Required Action B.1 or B.2</p>
<p>C. One or more fire detection instruments in a LSS** EFA zone is non-functional.</p>	<p>C.1 Establish an hourly fire watch.</p> <p><u>OR</u></p> <p>C.2.1 Verify affected area has FUNCTIONAL full area automatic fire suppression.</p> <p><u>AND</u></p> <p>C.2.2 Establish a once per shift fire watch patrol.</p> <p><u>OR</u></p> <p>C.3 Complete an evaluation as permitted by NRC RIS 2005-07 to implement required action(s).</p>	<p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>Prior to terminating Required Action C.1 or C.2</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. One or more fire detection instruments in a DID*** EFA zone is non-functional.	D.1 Establish a once per shift fire watch.	1 hour
	<u>OR</u>	
	D.2 Verify affected area has FUNCTIONAL full area automatic fire suppression.	1 hour
	<u>OR</u>	
	D.3 Complete an evaluation as permitted by NRC RIS 2005-07 to institute required action(s).	Prior to terminating Required Action D.1 or D.2
E. One or more fire detection instruments in a CONTAINMENT**** EFA zone is non-functional.	E.1 IF Containment is accessible, establish a once per 8 hour fire watch.	1 hour
	<u>OR</u>	(continued)

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-6-1 Verify the NFPA Standard 72D supervised circuits supervision associated with the detector alarms that are accessible during plant operation is FUNCTIONAL.	6 months
TR 16.9-6-2 Perform a visual inspection of each flame detection instrument.	12 months
TR 16.9-6-3 Perform a visual inspection of each smoke detection instrument accessible during plant operation.	12 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
TR 16.9-6-10 Verify the NFPA Standard 72D supervised circuits supervision associated with the detector alarms that are not accessible during plant operation is FUNCTIONAL.	18 months

Table 16.9-6-1

Fire Detection Instruments

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

Table 16.9-6-1

Fire Detection Instruments

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

Table 16.9-6-1

Fire Detection Instruments

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

Table 16.9-6-1

Fire Detection Instruments

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

Table 16.9-6-1

Fire Detection Instruments

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

Table 16.9-6-1

Fire Detection Instruments

EFA ZONE	DESCRIPTION	LOCATION		REQUIRED INSTRUMENTS ⁽¹⁾			RISK CRITERIA
		COLUMN OR AZIMUTH	ELEVATION	SMOKE	FLAME	HEAT	
217	D/G Corridor/ Battery/Stairwell	CC-71	560 + 0	5	0	0	LSS
218	D/G Corridor/ Battery/Stairwell	BB-71	560 + 0	4	0	0	LSS
219	Mech Pen Room	HH-52	577 + 0	6	0	0	DID
220	Mech Pen Room	JJ-62	577 + 0	6	0	0	DID
222	Airlock Access (Unit 1)	JJ-51	605 + 10	1	0	0	DID
224	Airlock Access (Unit 2)	JJ-63	605 + 10	1	0	0	DID
225	RN Pump Structure (B Train)	West Section	600 + 0	8	0	0	DID
226	RN Pump Structure (A Train)	East Section	600 + 0	8	0	0	DID
231	Reactor Bldg (Unit 1)	260 ⁰ -303 ⁰	Below 668 + 10	10	0	0	CONTAINMENT
232	Reactor Bldg (Unit 2)	260 ⁰ -303 ⁰	Below 668 + 10	10	0	0	CONTAINMENT

- (1) The fire detection instruments located within the containment are not required to be FUNCTIONAL 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.

BASES

FUNCTIONALITY 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.

Definitions:

- Conventional Detection A detector where the signal received does not identify the individual device operated.
- Addressable Detection A detector with discrete identification that can have its status individually identified.

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 FUNCTIONALITY 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	FD033D04	315	560, Valve Gallery, LL/53	1
45	FD045D04	306	560, Valve Gallery, LL/61	1
55	FD055D02	417	577, U1 KF Demin. Room, NN-PP/51	1
56	FD056D14	401	577, Elevator Corridor, RR-SS/55-58	2
56	FD056D15	401	577, Elevator Corridor, RR-SS/55-58	2
56	FD056D16	401	577, Elevator Corridor, RR-SS/55-58	2
58	FD058D01	476	577, U1 Letdown Hx Room, KK/53	1
58	FD058D02	477	577, U1 Moderating Hx Room, JJ/53	1
58	FD058D03	474	577, U1 Letdown Reheat Hx Room	1
58	FD058D04	475	577, U1 Letdown Chiller Hx Room	1
64	FD064D08	408	577, U2 KF Demin. Room, NN-PP/63	1
65	FD065D01	405	577, Filter Bunker Room, RR-SS/58-60	2
65	FD065D02	405	577, Filter Bunker Room, RR-SS/58-60	2
65	FD065D05	404A	577, Evap. Concentrate Batching Tank Room, PP-QQ/59	1
65	FD065D04	404B	577, Radwaste Feed Skid and Dewatering Pump Room, PP-QQ/59-60	1
65	FD065D08	550	577, Radwaste Batching Tank Room, NN-PP/60	1
65	FD065D10	404C	577, Evap. Concentrate Holdup Tank Room, NN-PP/59	1
65	FD065D12	403	577, Container and Drum Stg. Room, NN/57-58	1
67	FD067D15	465	577, U2 Letdown Reheat Hx Room	1
67	FD067D16	466	577, U2 Letdown Chiller Hx Room	1
67	FD067D17	467	577, U2 Letdown Hx Room, KK/61	1
67	FD067D18	468	577, U2 Moderating Hx Room, JJ/61	1

BASES (continued)

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

For the individual detector designation, see the EFA System Detector Series drawings (CNM-1376.00 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.

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of the Catawba Renewed Facility Operating Licenses Conditions

- REFERENCES
1. Catawba UFSAR, Section 9.5.1.
 2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
 3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
 4. Catawba Renewed Facility Operating License Conditions 2.C.(5).
 5. RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements.

16.9 AUXILIARY SYSTEMS

16.9-23 Fire Hydrants

COMMITMENT The Fire Hydrants shown in Table 16.9-23-1 shall be FUNCTIONAL.

APPLICABILITY: At all times.

REMEDIAL ACTIONS

-----NOTES-----

Credit can be taken for additional hose in yard hose equipment houses for providing equivalent capacity hose length to reach unprotected area for CONDITION C.

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>A.</p> <p>One NSWS pump structure Fire Hydrant (FH61 or FH62) non-functional.</p>	<p>-----NOTE----- Signage shall be placed on the non-functional Fire Hydrant indicating the hydrant is not available for use. -----</p> <p>A.1.1 Verify the other Fire Hydrant is FUNCTIONAL.</p> <p><u>AND</u></p> <p>A.1.2 Initiate action to restore the non-functional Fire Hydrant to FUNCTIONAL status.</p>	<p>Immediately</p> <p>Immediately</p>
<p>B.</p> <p>Both NSWS pump structure Fire Hydrants (FH61 and FH62) non-functional.</p>	<p>-----NOTE----- Signage shall be placed on the non-functional Fire Hydrant indicating the hydrant is not available for use. -----</p> <p>B.1.1 Verify backup fire suppression (fire extinguishers in the NSWS pump structure) is available.</p> <p><u>AND</u></p>	<p>1 Hour</p> <p>(continued)</p>

Remedial Actions (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. (continued)	<p>B.1.2 Establish a continuous fire watch in the NSW pump structure.</p> <p><u>OR</u></p> <p>B.2.1 Verify backup fire suppression (fire extinguishers in the NSW pump structure) is available.</p> <p><u>AND</u></p> <p>B.2.2 Verify affected area has FUNCTIONAL fire detection instrumentation</p> <p><u>AND</u></p> <p>B.2.3 Establish an hourly fire watch in the NSW pump structure.</p> <p><u>OR</u></p> <p>B.3 Complete an evaluation as permitted by NRC RIS 2005-07 and implement alternative compensatory measures as required.</p>	<p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>1 hour</p> <p>Prior to terminating Required Action B.1 or B.2</p>
C.	<p>-----NOTE----- Signage shall be placed on the non-functional Fire Hydrant indicating the hydrant is not available for use. -----</p>	<p>(continued)</p>

Remedial Actions (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
C. (continued) One or more Fire Hydrants non-functional other than those in CONDITION A or B.	C.1 Provide additional equivalent capacity fire hose of length to reach unprotected area at nearest FUNCTIONAL Fire Hydrant(s).	1 hour
	<u>OR</u> C.2 Complete an evaluation as permitted by NRC RIS 2005-07 and implement alternative compensatory measures as required.	Prior to terminating Required Action C.1

Table 16.9-23-1
Required Fire Hydrants

Hydrant Number	Location
FH 12	NW of U2 Transformer Yard
FH 13	N of U2 Turbine Building
FH 16	W of U1 Transformer Yard
FH 17	SW of U1 Transformer Yard
FH 24	S of U1 Turbine Building
FH 25	SE of SSF
FH 26	S of U1 FWST
FH 28	SE of U1 Fuel Building
FH 29	Outside PA Fence, E of Aux Building
FH 30	N of U2 Fuel Building
FH 31	N of U2 FWST
FH 32	N of U2 Turbine Building
FH 59	SW of SSF
FH 61	NSWS Pump Structure
FH 62	NSWS Pump Structure

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.9-23-1 Verify that each valve in the flow path is in the correct position.	In accordance with performance based criteria in BASES
TR 16.9-23-2 Perform a visual inspection of each Fire Hydrant to assure they show no signs of physical damage.	6 months
TR 16.9-23-3 Partially open each hydrant hose connection valve to verify flow with the fire hydrant fully open.	6 months
TR 16.9-23-4 Cycle each testable valve in the flow path through at least one complete cycle of full travel.	12 months

BASES

The FUNCTIONALITY of the Fire Suppression Systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety related equipment is located. The Fire Suppression System consists of the water supply/distribution system, sprinkler systems, fire hose stations, fire hydrants, and CO₂ systems. The collective capability of the Fire Suppression Systems is adequate to minimize potential damage to safety related equipment and is a major element in the facility Fire Protection Program.

The intent of TR 16.9-23-4 is to ensure the sectionalizing valve (main header valve used to isolate sections of the header) or isolation valve (branch line valve used to isolate specific fire suppression features (sprinkler system, hose standpipe, or fire hydrant)) is operating properly and can be used to achieve isolation when called upon. If a sectionalizing or isolation valve cannot be cycled but is in the correct position ensuring a FUNCTIONAL flow path (fully open) as required by COMMITMENT 16.9-1b., then the associated feature (sprinkler system, hose standpipe, or fire hydrant) can be considered FUNCTIONAL. If a sectionalizing or isolation valve cannot be cycled and is in the incorrect position, or its position cannot be determined, thereby not ensuring a FUNCTIONAL flow path (not fully open) as required by COMMITMENT 16.9-1b., then the affected fire suppression feature (sprinkler system,

BASES (continued)

hose standpipe, or fire hydrant) must be evaluated and the applicable SLCs entered (16.9-2, 16.9-4, and 16.9-23). If a sectionalizing valve in a loop header (i.e., flow path from two directions) cannot be cycled and it cannot be verified as fully open, then administrative controls may need to be implemented to ensure the available flow path is not isolated.

The proper positioning of RF/RV valves is critical to delivering fire suppression water at the fire source as quickly as possible. The option of increasing or decreasing the frequency of valve position verification allows the ability to optimize plant operational resources. Should an adverse trend develop with RF/RV valve positions, the frequency of verification shall be increased. Similarly, if the RF/RV valve position trends are positive, the frequency of verification could be decreased. Through programmed trending of RF/RV as found valve positions, the RF/RV System will be maintained at predetermined reliability standards. The Fire Protection Engineer is responsible for trending and determining verification frequencies based on the following:

Initially the frequency shall be monthly.

Annually review the results of the completed valve position verification procedures.

- If the results demonstrate that the valves are found in the correct position at least 99% of the time, the frequency of conducting the valve position verification may be decreased from monthly to quarterly or quarterly to semiannually or semiannually to annually as applicable. The frequency shall not be extended beyond annually (plus grace period).
- If the results demonstrate that the valves are not found in the correct position at least 99% of the time, the frequency of conducting the valve position verification shall be increased from annually to semiannually or semiannually to quarterly or quarterly to monthly as applicable. The valve position verification need not be conducted more often than monthly.

In the event that portions of the Fire Suppression Systems are non-functional, alternate backup fire fighting equipment is required to be made available in the affected areas until the non-functional equipment is restored to service. When the non-functional fire fighting equipment is intended for use as a backup means of fire suppression, a longer period of time is allowed to provide an alternate means of fire fighting than if the non-functional equipment is the primary means of fire suppression.

BASES (continued)

This SLC is part of the Catawba Fire Protection Program and therefore subject to the provisions of the Catawba Renewed Facility Operating License Conditions 2.C.(5).

REFERENCES

1. Catawba UFSAR, Section 9.5.1.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Plant Design Basis Specification for Fire Protection, CNS-1465.00-00-0006, as revised.
4. Catawba UFSAR, Section 18.2.8.
5. Catawba License Renewal Commitments, CNS-1274.00-00-0016, Section 4.12.1.
6. Catawba Renewed Facility Operating License Conditions 2.C.(5)
7. RIS 2005-07, Compensatory Measures to Satisfy the Fire Protection Program Requirements.

16.13 CONDUCT OF OPERATIONS

16.13-1 Fire Brigade

COMMITMENT

-----NOTE-----

The Fire Brigade shall not include three members of the minimum shift crew necessary for safe shutdown of the unit(s) and any personnel required for other essential functions during a fire emergency.

A site Fire Brigade of at least five members shall be maintained onsite.

APPLICABILITY: At all times.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Fire Brigade composition requirements not met.	A.1 Initiate action to fill required positions.	Immediately
	<u>AND</u> A.2 Restore minimum Fire Brigade composition.	2 hours

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.13-1-1 Verify Fire Brigade composition.	12 hours

BASES

The primary purpose of the Fire Brigade Training Program is to develop a group of station employees skilled in fire prevention, fire fighting techniques, first aid procedures, and emergency response. They are trained and equipped to function as a team for the fighting of fires. The station Fire Brigade organization is intended to be self-sufficient with respect to fire fighting activities.

BASES (continued)

A fire brigade leader is required by the Catawba operating licenses and Fire Protection Program.

The fire brigade leader and at least two brigade members of the on-shift fire brigade shall have sufficient training and knowledge of nuclear safety systems to understand the effects of fire and fire suppressants on nuclear safety performance.

The fire brigade members shall have no other assigned normal plant duties that would prevent immediate response to a fire or other emergency as required.

The Fire Brigade Training Program provides for initial training of all new Fire Brigade members, quarterly classroom training and drills, annual practical training, and leadership training for Fire Brigade leaders.

This SLC is part of the Catawba Renewed Facility Operating License Conditions 2.C.(5).

REFERENCES

1. Catawba UFSAR, Chapter 13.2.
2. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
3. Catawba Fire Protection Review, as revised.
4. Catawba Fire Protection Commitment Index.
5. Operations Management Procedure 1-10.
6. Catawba Renewed Facility Operating License Conditions 2.C.(5).

16.13 CONDUCT OF OPERATIONS

16.13-4 Minimum Station Staffing Requirements

COMMITMENT Minimum station staffing shall be as indicated in Table 16.13-4-1.

APPLICABILITY: According to Table 16.13-4-1.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. Minimum station staffing requirements not met.	A.1 Initiate action to fill required positions.	Immediately
	<u>AND</u> A.2 Restore minimum station staffing levels.	2 hours

TESTING REQUIREMENTS

TEST	FREQUENCY
TR 16.13-4-1 Verify station staffing levels.	12 hours

Table 16.13-4-1

Minimum Station Staffing Requirements

POSITION	BOTH UNITS IN MODES 1-4	ONE UNIT IN MODES 1-4	BOTH UNITS IN MODES 5, 6, OR NO MODE
Operations Shift Manager (OSM)	1	1	1
Shift Technical Advisor (STA)	1	1	1
Senior Reactor Operator (SRO) ⁽¹⁾⁽²⁾⁽³⁾	2	2	1
Reactor Operator (RO) ⁽¹⁾⁽⁴⁾	3	3	2
Non-Licensed Operator (NLO) ⁽¹⁾	5	5	4
Chemistry Technician	1	1	1
Radiation Protection Technician	3	3	3
Mechanical Maintenance Technician	1	1	1
Instrumentation and Electrical Technician	2	2	2
Medical Emergency Response Team (MERT)	2	2	2
Security Personnel	Per Security Plan	Per Security Plan	Per Security Plan

- (1) Either a SRO (active or inactive), RO, or other designated personnel (NLO) may be designated as the fire brigade leader. The totals for the appropriate position shall be increased by one, depending upon which position is being used to fulfill the role of fire brigade leader.
- (2) In addition to these requirements, during CORE ALTERATIONS (including fuel loading or transfer), a SRO or SRO limited to fuel handling shall be present to directly supervise the activity. During this time, no other duties shall be assigned to this person.
- (3) With any unit in MODES 1-4, a SRO shall be present in the control room at all times.
- (4) For each fueled unit, a RO shall be present at the controls at all times.

BASES

The requirements of this SLC consolidate Catawba station staffing requirements into one document. This SLC includes the unit staff requirements of the Catawba Facility Operating Licenses, Technical Specification (TS) 5.2.2, 10 CFR 50.54(m), applicable Operations Management Procedures (OMPs), Administrative Directive (AD) AD-TQ-ALL-0086, "Fire Brigade Training," the Catawba Fire Protection Program, the Catawba Emergency Plan, and SLC 16.13-1, "Fire Brigade." The total requirement for each position was obtained by summing the various individual requirements for that position. The bases for the numbers in the first column of Table 16.13-4-1 are as follows:

1 OSM (active SRO) – Required by 10 CFR 50.54(m)(2)(ii) and implemented via OMP.

1 STA (active or inactive SRO) – Required by TS 5.2.2g, which indicates that the individual fulfilling the STA position is the Shift Work Manager, and implemented via OMP. Note that old TS (pre-Improved TS) Table 6.2-1, which implemented the requirements of NUREG-0737, "Clarification of TMI Action Plan Requirements," did not require an STA on shift when both units were in MODE 5, 6, or defueled. Table 16.13-4-1 is more restrictive in that it requires an STA on shift at all times.

2 SROs (active SRO) – Required by 10 CFR 50.54(m)(2)(i). Per TS 5.2.2b and 10 CFR 50.54(m)(2)(iii), at least 1 SRO must be in the control room.

3 ROs – Required by 10 CFR 50.54(m)(2)(i).

3 NLOs – Required by TS 5.2.2a and Section B, Figure B-1 of the Emergency Plan and implemented via OMP.

2 NLOs – Required by the Fire Protection Program and implemented via AD and OMP.

Fire Brigade Leader – Required by the Catawba Facility Operating Licenses and Fire Protection Program and implemented via AD and OMP. The individual fulfilling this position shall be a SRO, RO, or other designated personnel (NLO) who is qualified to be a fire brigade leader. This individual functions as the fire brigade leader and is not available for other activities when directing the fire brigade. No regulations explicitly specify that the fire brigade leader be a SRO or RO. However, the fire brigade leader shall have sufficient training in or knowledge of plant safety related systems to understand the effects of a fire and fire suppression systems on safe shutdown capability.

1 Chemistry Technician (ERO) – Required by Section B, Figure B-1 of the Emergency Plan. Implemented via EP Group Manual Guideline 5.1.3. Any technician who is qualified may be credited towards fulfilling the ERO requirement.

BASES (continued)

3 Radiation Protection Technicians (2 technicians and 1 off-site dose assessor) (ERO) – Required by Section B, Figure B-1 of the Emergency Plan. Implemented via EP Group Manual Guideline 5.1.3. 1 is required by TS 5.2.2d and may be counted towards fulfilling the ERO requirement. Any technician who is qualified may be credited towards fulfilling the ERO requirement. In the event of a fire, the technician will respond to the fire for radiological monitoring purposes until directed otherwise.

1 Mechanical Maintenance Technician (ERO) – Required by Section B, Figure B-1 of the Emergency Plan. Implemented via EP Group Manual Guideline 5.1.3. Any technician who is fire brigade qualified may be credited towards fulfilling the ERO requirement and the fire brigade requirement. In the event of a fire, the technician will respond to the fire until directed otherwise.

2 Instrumentation and Electrical Technicians (ERO) – Required by Section B, Figure B-1 of the Emergency Plan. Implemented via EP Group Manual Guideline 5.1.3. Any technician who is fire brigade qualified may be credited towards fulfilling the ERO requirement and the fire brigade requirement. In the event of a fire, the technician will respond to the fire until directed otherwise.

2 MERT (ERO) – Required by Section B, Figure B-1 of the Emergency Plan. Implemented via EP Group Manual Guideline 5.1.3. Any technician who is qualified may be credited towards fulfilling the ERO requirement. In the event of a fire, the technician will respond to the fire for security purposes until directed otherwise.

Minimum station staffing totals for the SRO and RO positions in Table 16.13-4-1 are a function of the number of units in MODES 1-4. The totals for the remaining positions in Table 16.13-4-1 are not a function of the operational MODES of the units.

10 CFR 50.54(m)(2)(i) requires 2 SROs when both units are in MODES 1-4, 2 SROs when one unit is in MODES 1-4, and 1 SRO when no units are in MODES 1-4.

10 CFR 50.54(m)(2)(i) requires 3 ROs when both units are in MODES 1-4, 3 ROs when one unit is in MODES 1-4, and 2 ROs when no units are in MODES 1-4.

The primary purpose of the Fire Protection Program is to minimize both the probability and consequence of postulated fires. Despite designed active and passive fire protection systems installed throughout the plant, a properly trained and equipped fire brigade organization of at least 5 members is

required to provide immediate response to fires that may occur at the site. The fire brigade requirement is met by using personnel from Operations and

BASES (continued)

SPOC. 3 personnel from Operations are required (including the fire brigade leader) and the other 2 personnel are from SPOC.

The 2-hour REMEDIAL ACTION for restoring minimum station staffing levels is consistent with TS 5.2.2c and 5.2.2d, which allow 2 hours to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

- REFERENCES
1. Catawba Facility Operating Licenses for Units 1 and 2, NPF-35 and NPF-52.
 2. Catawba TS 5.2.2.
 3. 10 CFR 50.54(m).
 4. OMP 1-10, "Shift Manning and Overtime Requirements."
 5. AD-TQ-ALL-0086, "Fire Brigade Training."
 6. CNS-1465.00-00-0006, "Plant Design Basis Specification for Fire Protection."
 7. Catawba Emergency Plan.
 8. SLC 16.13-1, "Fire Brigade."
 9. Catawba Nuclear Station 10 CFR 50.48(c) Fire Protection Safety Evaluation (SE).
 10. EP Group Manual Guideline 5.1.3.