



Kelvin Henderson
Vice President
Catawba Nuclear Station

Duke Energy
CN01VP | 4800 Concord Road
York, SC 29745
o: 803.701.4251
f: 803.701.3221

CNS-16-037

May 26, 2016

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

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

Pursuant to 10CFR 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 Larry Rudy, Regulatory Affairs, at (803) 701-3084.

I certify that I am a duly authorized officer of Duke Energy Carolinas, LLC, and that the information contained herein accurately represents changes made to Chapter 16 of the UFSAR since the previous submittal.

A handwritten signature in black ink, appearing to read 'K. Henderson'.

Kelvin Henderson
Vice President, Catawba Nuclear Station

Attachment

A053
NRR

U.S. Nuclear Regulatory Commission
May 26, 2016
Page 2

xc: Catherine Haney, Regional Administrator
U. S. Nuclear Regulatory Commission, Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, GA 30303-1257

Jeffrey Whited
NRC Project Manager (CNS)
U. S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 8 B1A
11555 Rockville Pike
Rockville, MD 20852

G. A. Hutto, Senior Resident Inspector
Catawba Nuclear Station



May 26, 2016

Re: Catawba Nuclear Station
Selected Licensee Commitments Manual
Revision Date: 05/03/2015

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

REMOVE THESE PAGES

INSERT THESE PAGES

LIST OF EFFECTIVE SECTIONS

Pages 1 through 4
Revision 62

Pages 1 through 4
Revision 63

TAB 16.7

SLC 16.7-10-1 through 16.7-10-9
Revision 6

SLC 16.7-10-1 through 16.7-10-9
Revision 7

TAB 16.11

SLC 16.11-20-1 through 16.11-20-5
Revision 1

SLC 16.11-20-1 through 16.11-20-5
Revision 2

If you have any questions concerning the contents of this package update, contact Toni Lowery at (803)701-5046.

G.M. FOR

Cecil Fletcher
Regulatory Affairs Manager

Attachment

LIST OF EFFECTIVE SECTIONS

<u>SECTION</u>	<u>REVISION NUMBER</u>	<u>REVISION DATE</u>
TABLE OF CONTENTS	14	02/10/15
16.1	1	08/27/08
16.2	2	08/21/09
16.3	1	08/21/09
16.5-1	3	08/19/15
16.5-2	Deleted	
16.5-3	1	02/20/04
16.5-4	0	10/09/02
16.5-5	1	01/28/10
16.5-6	1	08/21/09
16.5-7	2	02/06/15
16.5-8	2	12/22/08
16.5-9	1	02/20/12
16.5-10	Deleted	
16.6-1	0	10/09/02
16.6-2	Deleted	
16.6-3	1	08/21/09
16.6-4	1	08/21/09
16.6-5	2	01/09/13
16.7-1	1	08/21/09
16.7-2	4	02/03/11
16.7-3	4	07/27/13
16.7-4	2	08/21/09
16.7-5	2	08/21/09

LIST OF EFFECTIVE SECTIONS

<u>SECTION</u>	<u>REVISION NUMBER</u>	<u>REVISION DATE</u>
16.7-6	2	08/21/09
16.7-7	1	08/21/09
16.7-8	2	08/21/09
16.7-9	9	06/06/13
16.7-10	7	05/03/16
16.7-11	1	08/21/09
16.7-12	1	08/21/09
16.7-13	2	08/21/09
16.7-14	1	08/21/09
16.7-15	1	08/21/09
16.7-16	0	06/08/09
16.7-17	0	02/10/15
16.8-1	6	12/10/15
16.8-2	2	02/20/12
16.8-3	1	10/24/06
16.8-4	2	11/05/07
16.8-5	3	08/21/09
16.9-1	7	10/24/11
16.9-2	5	10/24/11
16.9-3	3	02/03/11
16.9-4	3	08/21/09
16.9-5	6	06/23/10
16.9-6	10	02/10/15
16.9-7	4	08/21/09

LIST OF EFFECTIVE SECTIONS

<u>SECTION</u>	<u>REVISION NUMBER</u>	<u>REVISION DATE</u>
16.9-8	5	08/21/09
16.9-9	3	08/21/09
16.9-10	5	08/21/09
16.9-11	3	08/21/09
16.9-12	3	02/10/15
16.9-13	3	08/21/09
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
16.9-19	3	02/20/12
16.9-20	0	10/09/02
16.9-21	0	10/09/02
16.9-22	1	08/21/09
16.9-23	4	10/24/11
16.9-24	2	10/24/06
16.9-25	2	08/21/09
16.9-26	0	03/05/12
16.10-1	1	08/21/09
16.10-2	1	10/24/06
16.10-3	1	08/21/09
16.11-1	1	07/27/13
16.11-2	4	02/10/15

LIST OF EFFECTIVE SECTIONS

<u>SECTION</u>	<u>REVISION NUMBER</u>	<u>REVISION DATE</u>
16.11-3	0	10/09/02
16.11-4	1	08/21/09
16.11-5	0	10/09/02
16.11-6	3	08/03/15
16.11-7	9	02/10/15
16.11-8	0	10/09/02
16.11-9	0	10/09/02
16.11-10	1	08/21/09
16.11-11	1	03/20/03
16.11-12	0	10/09/02
16.11-13	1	07/27/13
16.11-14	0	10/09/02
16.11-15	0	10/09/02
16.11-16	1	10/24/11
16.11-17	0	10/09/02
16.11-18	1	08/21/09
16.11-19	0	10/09/02
16.11-20	2	05/03/16
16.11-21	0	10/09/02
16.12-1	0	10/09/02
16.13-1	0	10/09/02
16.13-2	Deleted	
16.13-3	Deleted	
16.13-4	0	10/09/02

16.7 INSTRUMENTATION

16.7-10 Radiation Monitoring for Plant Operations

COMMITMENT The radiation monitoring instrumentation channels for plant operations shown in Table 16.7-10-1 shall be FUNCTIONAL.

APPLICABILITY: As shown in Table 16.7-10-1.

REMEDIAL ACTIONS

CONDITION		REQUIRED ACTION	COMPLETION TIME
A.	One or more radiation monitoring channels Alarm/Trip setpoint for plant operations exceeding the value shown in Table 16.7-10-1.	A.1 Adjust the setpoint to within the limit.	4 hours
		<u>OR</u> A.2 Declare the channel non-functional.	4 hours

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>B. One Containment Atmosphere – High Gaseous Radioactivity (EMF-39 – Low Range) channel non-functional.</p>	<p>B.1 -----NOTE----- In order to utilize Required Action B.1, the following conditions must be satisfied:</p> <ol style="list-style-type: none"> 1. The affected unit is in MODES 5 or 6. 2. EMF-36 is FUNCTIONAL and in service for the affected unit. 3. The Reactor Coolant System for the affected unit has been vented. 4. Either the reactor vessel head is in place (bolts are not required), or if it is not in place, the lifting of heavy loads over the reactor vessel and the movement of irradiated fuel assemblies within containment have been suspended. <p>-----</p> <p>Restore the non-functional channel to FUNCTIONAL status.</p>	<p>12 hours</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>C. Required Action and associated Completion Time of Condition B not met.</p> <p><u>OR</u></p> <p>Required Action B.1 not utilized.</p>	<p>C.1 Close the Containment Purge Exhaust System (CPES) valves.</p>	Immediately
<p>D. One Control Room Air Intake – Radiation Level – High Gaseous Radioactivity (EMF-43A & B – Low Range) channel non-functional in one or both control room intakes.</p>	<p>D.1 Initiate action to restore non-functional channel(s) to FUNCTIONAL status.</p> <p><u>AND</u></p> <p>D.2 Ensure that one Control Room Area Ventilation System (CRAVS) train is in operation.</p>	<p>Immediately</p> <p>1 hour</p>
<p>E. One Fuel Storage Pool Area – Radiation Level (1EMF-15, 2EMF-4) channel non-functional.</p>	<p>E.1 Provide a portable continuous monitor with the same Alarm Setpoint in the fuel storage pool area.</p> <p><u>AND</u></p> <p>E.2.1 Restore non-functional monitor to FUNCTIONAL status.</p> <p><u>OR</u></p> <p>E.2.2 Suspend all operations involving fuel movement in the fuel building.</p>	<p>Immediately</p> <p>30 days</p> <p>30 days</p>

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
F. One Fuel Storage Pool Area – High Gaseous Radioactivity (EMF-42) channel non-functional.	F.1.1 Initiate action to restore non-functional channel to FUNCTIONAL status.	Immediately
	<u>AND</u>	
	F.1.2 -----NOTE----- Only applicable during fuel handling operations in the fuel building. -----	
	Ensure one Fuel Handling Ventilation Exhaust System (FHVES) train is in operation and all operating FHVES trains are in the filtered mode.	Immediately
	<u>OR</u>	
	F.2 Suspend all operations involving fuel movement in the fuel building.	Immediately
G. One Auxiliary Building Ventilation – High Gaseous Radioactivity (EMF-41) channel non-functional.	G.1 Ensure one Auxiliary Building Filtered Ventilation Exhaust System (ABFVES) train is OPERABLE and in operation in the filtered mode for each unit that requires an OPERABLE ABFVES.	Immediately
	<u>AND</u>	
	G.2 Ensure all other operating ABFVES trains are in the filtered mode.	Immediately

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
<p>H. One Component Cooling Water System (EMF-46A & B) channel non-functional.</p>	<p>H.1 Collect and analyze grab samples for principal gamma emitters (listed in Table 16.11-1-1, NOTE 3) at a lower limit of detection of no more than 5×10^{-7} $\mu\text{Ci/ml}$.</p>	<p>Once per 12 hours</p>
	<p><u>AND</u></p> <p>H.2 Restore non-functional channel to FUNCTIONAL status.</p>	<p>30 days</p>
<p>I. One or more N-16 Leakage Monitor (EMF-71, 72, 73, & 74) channels non-functional.</p>	<p>I.1 Ensure that the Condenser Evacuation System Noble Gas Activity Monitor (EMF-33) is FUNCTIONAL and in operation.</p>	<p>Immediately</p>
	<p><u>OR</u></p> <p>I.2 Ensure that Required Actions are met per SLC 16.11-7 if the Condenser Evacuation System Noble Gas Activity Monitor (EMF-33) is non-functional or not in operation.</p>	<p>Immediately</p>
<p>J. One Auxiliary Building Cooling Water System (EMF-89) channel non-functional.</p>	<p>J.1 Collect and analyze grab samples for principal gamma emitters (listed in Table 16.11-1-1, NOTE 3) at a lower limit of detection of no more than 5×10^{-7} $\mu\text{Ci/ml}$.</p>	<p>Once per 7 days</p>
	<p><u>AND</u></p> <p>J.2 Restore non-functional channel to FUNCTIONAL status.</p>	<p>30 days</p>

TESTING REQUIREMENTS

-----NOTE-----

Refer to Table 16.7-10-1 to determine which TRs apply for each Radiation Monitoring for Plant Operations channel.

TEST	FREQUENCY
TR 16.7-10-1 Perform CHANNEL CHECK.	12 hours
TR 16.7-10-2 Perform CHANNEL OPERATIONAL TEST.	9 months
TR 16.7-10-3 Perform CHANNEL CALIBRATION.	18 months
TR 16.7-10-4 Perform CHANNEL OPERATIONAL TEST.	92 days

Table 16.7-10-1

Radiation Monitoring Instrumentation for Plant Operations

MONITOR	APPLICABLE MODES	REQUIRED CHANNELS	ALARM/TRIP SETPOINT	TESTING REQUIREMENTS
1. Containment Atmosphere – High Gaseous Radioactivity (EMF-39 – Low Range)	1, 2, 3, 4, 5, 6	1	Note (a)	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
2. Fuel Storage Pool Areas – High Gaseous Radioactivity (EMF-42)	With irradiated fuel in the fuel storage pool areas	1	$\leq 1.7 \times 10^{-4}$ $\mu\text{Ci/ml}$	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
3. Fuel Storage Pool Areas – Radiation Level (Fuel Bridge – 1EMF-15, 2EMF-4)	With fuel in the fuel storage pool areas	1	≤ 15 mR/h Note (d)	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
4. Control Room Air Intake – Radiation Level – High Gaseous Radioactivity (EMF-43A & B – Low Range)	At all times	2 (1/intake)	$\leq 1.7 \times 10^{-4}$ $\mu\text{Ci/ml}$	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
5. Auxiliary Building Ventilation – High Gaseous Radioactivity (EMF-41)	1, 2, 3, 4	1	$\leq 1.7 \times 10^{-4}$ $\mu\text{Ci/ml}$	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
6. Component Cooling Water System (EMF-46A & B)	At all times ^(e)	1 ^(b)	$\leq 1 \times 10^{-3}$ $\mu\text{Ci/ml}$	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
7. N-16 Leakage Monitor (EMF-71, 72, 73, & 74)	1 (40-100% reactor power)	4 (1/steamline)	Note (c)	TR 16.7-10-1 TR 16.7-10-2 TR 16.7-10-3
8. Auxiliary Building Cooling Water System (EMF-89)	At all times	1	$\leq 1 \times 10^{-3}$ $\mu\text{Ci/ml}$	TR 16.7-10-1 TR 16.7-10-3 TR 16.7-10-4

Table 16.7-10-1 Notes

- (a) When venting or purging from containment to the atmosphere, the trip setpoint shall not exceed the equivalent limits of SLC 16.11-6 in accordance with the methodology and parameters in the ODCM. When not venting or purging in Modes 5 or 6, the alarm setpoint concentration ($\mu\text{Ci/ml}$) shall be such that the actual submersion dose rate would not exceed 5 mR/hr without alarm. When not venting or purging in Modes 1 through 4, the alarm setpoint shall be no more than 3 times the containment atmosphere activity as indicated by the radiation monitor.
- (b) For EMF-46A & B: The EMF monitor associated with the operating Component Cooling Water System train shall be FUNCTIONAL. This requirement is based on the existence of an interlock which blocks the EMF loss of flow alarm from being received in the control room when the associated train pump motor(s) are not running.
- (c) The setpoint is as required by the primary to secondary leak rate monitoring program.
- (d) Catawba's Spent Fuel Pools were originally licensed for compliance with 10 CFR 70.24. The basis for the 15 mR/hr setpoint can be found in 10 CFR 70.24(a)(2) which states, in part, "... The monitoring devices in the system shall have a preset alarm point of not less than 5 millirems per hour (in order to avoid false alarms) nor more than 20 millirems per hour. ..." Although Catawba received exemption from 10 CFR 70.24 in 1997, the 15 mR/hr setpoint limit for detection of inadvertent criticality in the Spent Fuel Pool is still appropriate. Catawba is presently committed to compliance with 10 CFR 50.68 which requires, in part, "(6) Radiation monitors are provided in storage and associated handling areas when fuel is present to detect excessive radiation levels and initiate appropriate safety actions."

Therefore, the setpoint may be elevated, using approved plant procedures, above 15 mR/hr during Independent Spent Fuel Storage Installation (ISFSI) Transportable Storage Container (TSC) transfer activities when the loaded TSC may generate dose rates in excess of 15 mR/hr at the detector location. The setpoint shall be returned to ≤ 15 mR/hr upon completion of the TSC transfer.
- (e) The Component Cooling Water (CCW) radiation monitors are not considered to be non-functional just because there is no CCW flow through their respective trains. The EMFs would be considered non-functional if one of the inlet/outlet CCW isolation valves to the EMF were closed, if the EMF itself was not functioning properly, or if preventive maintenance/calibration activities were being performed on the EMF rendering it out of service. For the situation where the associated train related CCW pumps are not running and a section of the CCW System (e.g., CCW heat exchanger) has been isolated and drained such that the associated radiation monitor has no process fluid to monitor, grab samples are not required.

BASES

The FUNCTIONALITY of the radiation monitoring instrumentation for plant operations ensures that: (1) the associated action will be initiated when the radiation level monitored by each channel or combination thereof reaches its setpoint, (2) the specified coincidence logic is maintained, and (3) sufficient redundancy is maintained to permit a channel to be out of service for testing or maintenance. The radiation monitors for plant operations senses radiation levels in selected plant systems and locations and determines whether or not predetermined limits are being exceeded. The radiation monitors send actuation signals to initiate alarms or automatic isolation action and actuation of emergency exhaust or ventilation systems. Some of the final actuations are dependent on plant condition in addition to the actuation signals from the radiation monitors.

Operation of the Component Cooling Water (CCW) System Train A with the Train A Radiation Monitoring System (EMF) monitor non-functional and relying on the Train B EMF monitor for detection of radioactivity is not permissible. Likewise, operation of the CCW System Train B with the Train B EMF monitor non-functional and relying on the Train A EMF monitor for detection of radioactivity is not permissible. This is due to the interlock between the EMF monitor low-flow alarm and the operation of the CCW System pump motors on the same train. The EMF monitor in the operating CCW System pump train must be FUNCTIONAL, or the compensatory measures taken as specified.

In MODES 5 and 6, initiation of the Containment Purge Exhaust System (CPES) with EMF-39 non-functional is not permissible. The basis for Required Action B.1 is to allow the continued operation of the CPES with EMF-39 initially FUNCTIONAL. Continued operation of the CPES is contingent upon the ability of the affected unit to meet the requirements as noted in Required Action B.1.

REFERENCES

1. Letter from NRC to Gary R. Peterson, Duke, Issuance of Improved Technical Specifications Amendments for Catawba, September 30, 1998.
2. Letter from NRC to M. S. Tuckman, Duke, Issuance of Exemption to 10 CFR 70.24, Criticality Accident Requirements, July 29, 1997.

16.11 RADIOLOGICAL EFFLUENTS CONTROLS

16.11-20 Explosive Gas Monitoring Instrumentation

COMMITMENT The Explosive Gas Monitoring Instrumentation channels shown in Table 16.11-20-1 shall be FUNCTIONAL with their Alarm/Trip Setpoints set to ensure that the limits of SLC 16.11-18 are not exceeded.

APPLICABILITY: During WASTE GAS HOLDUP SYSTEM operation.

REMEDIAL ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more required Explosive Gas Monitoring Instrumentation channel(s) Alarm/Trip Setpoint less conservative than required.	A.1 Declare the channel(s) non-functional.	Immediately
B. One required hydrogen monitor channel non-functional.	B.1 Suspend oxygen supply to the recombiner. <u>AND</u> B.2 Restore channel to FUNCTIONAL status.	Immediately 30 days
C. One required oxygen monitor channel non-functional.	C.1 Obtain and analyze grab samples. <u>AND</u> C.2 Restore channel to FUNCTIONAL status.	24 hours 30 days

(continued)

REMEDIAL ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Two required oxygen monitor channels non-functional.	D.1 Obtain and analyze grab samples.	Once per 4 hours during degassing operations <u>AND</u> Once per 24 hours during other operations
	<u>AND</u> D.2 Restore channels to FUNCTIONAL status.	30 days
E. Required Action and associated Completion Time of Condition B, C, or D not met.	E.1 Prepare and submit a Special Report to the NRC to explain why the non-functionality was not corrected within the time specified.	30 days

TESTING REQUIREMENTS

-----NOTE-----
Refer to Table 16.11-20-1 to determine which TRs apply for each Explosive Gas Monitoring Instrumentation channel.

TEST	FREQUENCY
TR 16.11-20-1 Perform CHANNEL CHECK.	24 hours
TR 16.11-20-2 Perform COT.	31 days

(continued)

TESTING REQUIREMENTS (continued)

TEST	FREQUENCY
<p>TR 16.11-20-3-----NOTE-----</p> <p>The CHANNEL CALIBRATION shall include the use of standard gas samples in accordance with the manufacturer's recommendations. In addition, a standard gas sample of nominal four volume percent hydrogen (for the hydrogen monitors) and four volume percent oxygen (for the oxygen monitors), with the balance nitrogen, shall be used in the calibration to check linearity of the analyzer.</p> <p>-----</p> <p>Perform CHANNEL CALIBRATION.</p>	<p>92 days</p>

Table 16.11-20-1

Explosive Gas Monitoring Instrumentation

INSTRUMENT		REQUIRED CHANNELS	TESTING REQUIREMENTS
WASTE GAS HOLDUP SYSTEM Explosive Gas Monitoring Instrumentation			
1.	Hydrogen Monitors	1/in-service train per station	TR 16.11-20-1 TR 16.11-20-2 TR 16.11-20-3
2.	Oxygen Monitors	2/in-service train per station	TR 16.11-20-1 TR 16.11-20-2 TR 16.11-20-3

BASES The Explosive Gas Monitoring Instrumentation is provided for monitoring and controlling the concentrations of potentially explosive gas mixtures in the WASTE GAS HOLDUP SYSTEM.

If an instrument has alarm and trip capability, then both the alarm and the trip setpoints are required to be verified for the instrument to remain FUNCTIONAL. For instruments with alarm-only capability, the alarm setpoint must be verified for the instrument to remain FUNCTIONAL.

OWGMT6540 and OWGMT6560 provide both an alarm and a trip function. OWGMT6160 and OWGMT6161 provide an alarm-only function.

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