

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
3/4.3.3 MONITORING INSTRUMENTATION Radiation Monitoring For Plant Operations.....	3/4 3-51
TABLE 3.3-6 RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS.....	3/4 3-52
TABLE 4.3-3 RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS SURVEILLANCE REQUIREMENTS.....	3/4 3-54
Movable Incore Detectors.....	3/4 3-55
Seismic Instrumentation..... Deleted	3/4 3-56
TABLE 3.3-7 SEISMIC MONITORING INSTRUMENTATION..... Deleted	3/4 3-57
REQUIREMENTS.....	3/4 3-58
TABLE 4.3-4 Meteorological Instrumentation..... Deleted	3/4 3-59

CATAWBA - UNITS 1 & 2

Vb

Amendment No. ~~80~~ (Unit 1)
Amendment No. ~~80~~ (Unit 2)

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
TABLE 3.3-8 METEOROLOGICAL MONITORING INSTRUMENTATION.. (Deleted)	3/4 3-60
TABLE 4.3-5 METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.... (Deleted)	3/4 3-61
Remote Shutdown System.....	3/4 3-62
TABLE 3.3-9 REMOTE SHUTDOWN MONITORING INSTRUMENTATION.....	3/4 3-63
TABLE 4.3-6 REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-64
Accident Monitoring Instrumentation.....	3/4 3-65
TABLE 3.3-10 ACCIDENT MONITORING INSTRUMENTATION.....	3/4 3-66
TABLE 4.3-7 ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-68
Chlorine Detection Systems.....	3/4 3-70
TABLE 3.3-11 (Deleted)	
Loose Part Detection System... Deleted	3/4 3-79
Explosive Gas Monitoring Instrumentation.....	3/4 3-80
TABLE 3.3-12 EXPLOSIVE GAS MONITORING INSTRUMENTATION.....	3/4 3-81
TABLE 4.3-8 EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-83
Boron Dilution Mitigation System.....	3/4 3-85
3/4.3.4 TURBINE OVERSPEED PROTECTION.....	3/4 3-87

3/4.4 REACTOR COOLANT SYSTEM

3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION	
Startup and Power Operation.....	3/4 4-1
Hot Standby.....	3/4 4-2
Hot Shutdown.....	3/4 4-3
Cold Shutdown - Loops Filled.....	3/4 4-5
Cold Shutdown - Loops Not Filled.....	3/4 4-6

INSTRUMENTATION

SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above accessible seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. Data retrieved from the triaxial time-history accelerograph shall include a post-event CHANNEL CALIBRATION obtained by actuation of the internal test and calibrate function immediately prior to removing data. CHANNEL CALIBRATION shall be performed immediately after insertion of the new recording media in the triaxial time-history accelerograph recorder. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

This page deleted

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM INSTRUMENTS OPERABLE</u>
1. Triaxial Time-History Accelerographs		
a. 1MIMT 5070 (Remote Sensor A) Containment Base Slab	-1 g to + 1 g	1
b. 1MIMT 5080 (Remote Sensor B) Containment Vessel Elev 619'5"	-1 g to + 1 g	1
c. 1MIMT 5090 (Starter Unit) Containment Base Slab	0.005 g to 0.05 g	1
2. Triaxial Peak Accelerographs		
a. 1MIMT 5010 - Containment Bldg. Elev 588' + 6 1/8"	0 g to + 2 g	1
b. 1MIMT 5020 - Containment Bldg. Elev 567'2 1/2"	0 g to + 2 g	1
c. 1MIMT 5030 - Auxiliary Bldg. Elev 543'	0 g to + 2 g	1
3. Triaxial Seismic Switch		
1MIMT 5000 - Containment Base Slab	0.025 g to 0.25 g	1*
4. Triaxial Response-Spectrum Recorders		
a. 1MIMT 5040 - Containment Base Slab	0 to 34 g at 2 to 25 Hz	1*
b. 1MIMT 5050 - Containment Bldg. Elev 579'3 1/2"	0 to 34 g at 2 to 25 Hz	1
c. 1MIMT 5060 - Auxiliary Bldg. Elev 577'	0 to 34 g at 2 to 25 Hz	1

*With reactor control room indication.

This page deleted

TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>
1. Triaxial Time-History Accelerographs			
a. 1MIMT 5070 (Remote Sensor A) Containment Base Slab	M*	R	SA
b. 1MIMT 5080 (Remote Sensor B) Containment Vessel Elev 619'5"	M*	R	SA
c. 1MIMT 5090 (Starter Unit) Containment Base Slab	N.A.	R	SA
2. Triaxial Peak Accelerographs			
a. 1MIMT 5010 - Containment Bldg. Elev 588' + 6 1/8"	N.A.	R	N.A.
b. 1MIMT 5020 - Containment Bldg. Elev 567' 2 1/2"	N.A.	R	N.A.
c. 1MIMT 5030 - Auxiliary Bldg. Elev 543'	N.A.	R	N.A.
3. Triaxial Seismic Switch			
1MIMT 5000 - Containment Base Slab**	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. 1MIMT 5040 - Containment Base Slab**	M	R	SA
b. 1MIMT 5050 - Containment Bldg. Elev 579' 3 1/2"	N.A.	R	N.A.
c. 1MIMT 5060 - Auxiliary Bldg. Elev 577'	N.A.	R	N.A.

*Except seismic trigger.

**With reactor control room indications.

This page deleted

INSTRUMENTATION

METEOROLOGICAL INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-5.

This page deleted

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>MINIMUM OPERABLE</u>
1. Wind Speed		
a. Meteorological Tower	Nominal Elev. 661'10"	1
b. Meteorological Tower	Nominal Elev. 768'10"	1
2. Wind Direction		
a. Meteorological Tower	Nominal Elev. 661'10"	1
b. Meteorological Tower	Nominal Elev. 768'10"	1
3. Air Temperature - ΔT		
Meteorological Tower	Nominal Elev. 768'10"-661'10"	1

This page deleted

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wind Speed		
a. Nominal Elev. 661' 10"	D	SA
b. Nominal Elev. 768' 10"	D	SA
2. Wind Direction		
a. Nominal Elev. 661' 10"	D	SA
b. Nominal Elev. 768' 10"	D	SA
3. Air Temperature - ΔT		
Nominal Elev. 768' 10" - 661' 10"	D	SA

This page deleted

INSTRUMENTATION

LOOSE-PART DETECTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.9 The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2.

ACTION:

- a. With one or more Loose-Part Detection System channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each channel of the Loose-Part Detection Systems shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK at least once per 24 hours,
- b. An ANALOG CHANNEL OPERATIONAL TEST except for verification of Setpoint at least once per 31 days, and
- c. A CHANNEL CALIBRATION at least once per 18 months.*

*This surveillance need not be performed until prior to entering STARTUP following the Unit 1 first refueling. (This applies to Unit 1 only.)

INSTRUMENTATION

BASES

3/4.3.3.2 MOVABLE INCORE DETECTORS

The OPERABILITY of the movable incore detectors with the specified minimum complement of equipment ensures that the measurements obtained from use of this system accurately represent the spatial neutron flux distribution of the core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(Z)$ or $F_{\Delta H}^N$ a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8648, June 1976, may be used in recalibration of the Excore Neutron Flux Detection System, and full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range channel is inoperable.

3/4.3.3.3 SEISMIC INSTRUMENTATION Deleted

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION Deleted

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972.

3/4.3.3.5 REMOTE SHUTDOWN SYSTEM

The OPERABILITY of the Remote Shutdown System ensures that sufficient capability is available to permit safe shutdown of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criterion 19 of 10 CFR Part 50.

The OPERABILITY of the Remote Shutdown System ensures that a fire will not preclude achieving safe shutdown. The Remote Shutdown System instrumentat

INSTRUMENTATION

BASES

3/4.3.3.9 ~~LOOSE-PART DETECTION SYSTEM~~ Deleted

~~The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the Reactor System and avoid or mitigate damage to Reactor System components. The allowable out-of-service times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.~~

3/4.3.3.10 EXPLOSIVE GAS MONITORING INSTRUMENTATION

The explosive gas instrumentation is provided for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the WASTE GAS HOLDUP SYSTEM.

ATTACHMENT 4b

PROPOSED TECHNICAL SPECIFICATION AMENDMENTS FOR MCGUIRE

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
Movable Incore Detectors.....	3/4 3-45
Seismic Instrumentation Deleted.....	3/4 3-46
TABLE 3.3-7 SEISMIC MONITORING INSTRUMENTATION Deleted.....	3/4 3-47
TABLE 4.3-4 SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS Deleted.....	3/4 3-48
Meteorological Instrumentation Deleted.....	3/4 3-49
TABLE 3.3-8 METEOROLOGICAL MONITORING INSTRUMENTATION Deleted.....	3/4 3-50
TABLE 4.3-5 METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS Deleted.....	3/4 3-51
Remote Shutdown Instrumentation.....	3/4 3-52
TABLE 3.3-9 REMOTE SHUTDOWN MONITORING INSTRUMENTATION.....	3/4 3-53

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
TABLE 4.3-6 REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-54
Accident Monitoring Instrumentation.....	3/4 3-55
TABLE 3.3-10 ACCIDENT MONITORING INSTRUMENTATION.....	3/4 3-56
TABLE 4.3-7 ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-57
Explosive Gas Monitoring Instrumentation.....	3/4 3-71
TABLE 3.3-13 EXPLOSIVE GAS MONITORING INSTRUMENTATION.....	3/4 3-72
TABLE 4.3-9 EXPLOSIVE GAS MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-75
Loose-Part Detection System Deleted.....	3/4 3-78
3/4.3.4 TURBINE OVERSPEED PROTECTION.....	3/4 3-79
<u>3/4.4 REACTOR COOLANT SYSTEM</u>	
3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION	
Startup and Power Operation.....	3/4 4-1
Hot Standby.....	3/4 4-2
Hot Shutdown.....	3/4 4-3
Cold Shutdown - Loops Filled.....	3/4 4-5

INSTRUMENTATION

SEISMIC INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.3 The seismic monitoring instrumentation shown in Table 3.3-7 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.3.1 Each of the above seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-4.

4.3.3.3.2 Each of the above accessible seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours following the seismic event. Data shall be retrieved from accessible actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. Data retrieved from the triaxial time-history accelerograph shall include a post-event CHANNEL CALIBRATION obtained by actuation of the internal test and calibrate function immediately prior to removing data. CHANNEL CALIBRATION shall be performed immediately after insertion of the new recording media in the triaxial time-history accelerograph recorder. A Special Report shall be prepared and submitted to the Commission pursuant to Specification 6.9.2, with a copy to Director, Office of Nuclear Reactor Regulation, Attention: Chief, Structural and Geotechnical Engineering Branch, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, within 10 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

This page deleted

TABLE 3.3-7

SEISMIC MONITORING INSTRUMENTATION

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM INSTRUMENTS OPERABLE</u>
1. Triaxial Time-History Accelerographs		
a. 1MIMT 5000 (Remote Sensor A) Containment Base Slab	0-1g	1
b. 1MIMT 5010 (Remote Sensor A) Containment Wall Elev. 786' 5"	0-1g	1
c. 1MIMT 5020 (Starter Unit) Containment Base Slab	0.005 - 0.05g	1
2. Triaxial Peak Accelerographs		
a. 1MIMT 5030 Containment Bldg Elev. 799' 9 9/16"	0-2g	1
b. 1MIMT 5040 Containment Bldg Elev. 746' 2 1/2"	0-2g	1
c. 1MIMT 5050 Auxiliary Bldg Elev. 716' 6"	0-2g	1
3. Triaxial Seismic Switches		
1MIMT 5060 Containment Base Slab	0.025 - 0.25g	1*
4. Triaxial Response-Spectrum Recorders		
a. 1MIMT 5070 Containment Base Slab	0-2g	1*
b. 1MIMT 5080 Containment Bldg Elev. 751' 8 1/4"	0-2g	1
c. 1MIMT 5090 Auxiliary Bldg Elev. 750'	0-2g	1

*With reactor control room indication

This page deleted

TABLE 4.3-4

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>
1. Triaxial Time-History Accelerographs			
a. 1MIMT 5000 (Remote Sensor A) Containment Base Slab	M*	R	SA
b. 1MIMT 5010 (Remote Sensor B) Containment Wall Elev. 786'5"	M*	R	SA
c. 1MIMT 5020 (Starter Unit) Containment Base Slab	N.A.	R	SA
2. Triaxial Peak Accelerographs			
a. 1MIMT 5030 Containment Bldg Elev. 799' 9 9/16"	N.A.	R	N.A.
b. 1MIMT 5040 Containment Bldg Elev. 746' 2 1/2"	N.A.	R	N.A.
c. 1MIMT 5050 Auxiliary Bldg Elev. 716' 6"	N.A.	R	N.A.
3. Triaxial Seismic Switches			
1MIMT 5060 Containment Base Slab**	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. 1MIMT 5070 Containment Base Slab**	M	R	SA
b. 1MIMT 5080 Containment Bldg Elev. 751' 8 1/4"	N.A.	R	N.A.
c. 1MIMT 5090 Auxiliary Bldg Elev. 750'	N.A.	R	N.A.

*Except seismic trigger

**With reactor control room indications.

*Amendment No. (Unit 1)
Amendment No. (Unit 2)*

This page deleted

INSTRUMENTATION

METEOROLOGICAL INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.4 The meteorological monitoring instrumentation channels shown in Table 3.3-8 shall be OPERABLE.

APPLICABILITY: At all times.

ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.4 Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 4.3-5.

This page deleted

TABLE 3.3-8

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>MINIMUM OPERABLE</u>
1. Wind Speed		
a. Meteorological Tower	Nominal Elev. 786'	1
b. Meteorological Tower	Nominal Elev. 886'	1
2. Wind Direction		
a. Meteorological Tower	Nominal Elev. 786'	1
b. Meteorological Tower	Nominal Elev. 886'	1
3. Air Temperature - Delta T		
Meteorological Tower	Nominal Elev. 886' - 786'	1

*Amendment NO. (Unit 1)
Amendment NO. (Unit 2)*

This page deleted

TABLE 4.3-5

METEOROLOGICAL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wind Speed		
a. Nominal Elev. 786'	D	SA
b. Nominal Elev. 886'	D	SA
2. Wind Direction		
a. Nominal Elev. 786'	D	SA
b. Nominal Elev. 886'	D	SA
3. Air Temperature - Delta T		
Nominal Elev. 886'-786'	D	SA

This page Deleted

INSTRUMENTATION

LOOSE-PART DETECTION SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.3.10 The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY: MODES 1 and 2

ACTION:

- a. With one or more Loose-Part Detection System channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Specification 6.9/2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.
- b. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each channel of the Loose-Part Detection Systems shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK at least once per 24 hours, and
- b. An ANALOG CHANNEL OPERATIONAL TEST except for verification of Setpoint at least once per 31 days, and
- c. A CHANNEL CALIBRATION at least one per 18 months.

INSTRUMENTATION

BASES

MOVABLE INCORE DETECTORS (Continued)

of the core. The OPERABILITY of this system is demonstrated by irradiating each detector used and determining the acceptability of its voltage curve.

For the purpose of measuring $F_Q(Z)$ or $F_{\Delta H}^N$ a full incore flux map is used. Quarter-core flux maps, as defined in WCAP-8643, June 1976, may be used in recalibration of the Excore Neutron Flux Detection System, and full incore flux maps or symmetric incore thimbles may be used for monitoring the QUADRANT POWER TILT RATIO when one Power Range channel is inoperable.

3/4.3.3.3 SEISMIC INSTRUMENTATION Deleted

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

3/4.3.3.4 METEOROLOGICAL INSTRUMENTATION Deleted

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972.

3/4.3.3.5 REMOTE SHUTDOWN INSTRUMENTATION

The OPERABILITY of the remote shutdown instrumentation ensures that sufficient capability is available to permit shutdown and maintenance of HOT STANDBY of the facility from locations outside of the control room. This capability is required in the event control room habitability is lost and is consistent with General Design Criterion 19 of 10 CFR 50.

3/4.3.3.6 ACCIDENT MONITORING INSTRUMENTATION

The OPERABILITY of the accident monitoring instrumentation ensures that sufficient information is available on selected plant parameters to monitor and assess these variables following an accident. This capability is consistent with the recommendations of Regulatory Guide 1.97, "Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant Conditions During and Following an Accident," December 1975 and NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations."

BASES

3/4.3.3.10 ~~LOOSE PART DETECTION INSTRUMENTATION~~ Deleted

~~The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the reactor system and avoid or mitigate damage to reactor system components. The allowable out-of-service times and Surveillance Requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.~~

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles. All Category I structures except the new fuel vault at McGuire, are designed to withstand effects of turbine missiles without any adverse impact on the safety related equipment housed inside (FSAR Section 3.5.2.7 and 10.2.3). To assure protection against turbine overspeed a "Turbine Overspeed Reliability Program" is implemented. Tests and inspections associated with this program will be performed in accordance with station procedures, maintenance work requests and/or outage work schedules as appropriate. All deviations from the program or deficiencies identified through the specified maintenance, calibration or testing activities are evaluated by Duke Power Company to determine if operability of the system has been affected and appropriate action taken such as correcting the deviation or deficiency, performing compensatory action, or removing the turbine from service.

ATTACHMENT 5a

PROPOSED SELECTED LICENSEE COMMITMENT PAGES FOR CATAWBA

CATAWBA NUCLEAR STATION
FINAL SAFETY ANALYSIS REPORT
SELECTED LICENSEE COMMITMENTS
CHAPTER 16.7

INSTRUMENTATION

Table of Contents

16.7-1	ATWS Mitigation System Actuation Circuitry (AMSAC)
16.7-2	Seismic Instrumentation
16.7-3	Meteorological Instrumentation
16.7-4	Loose-Part Detection System

16.7 INSTRUMENTATION

16.7-2 SEISMIC INSTRUMENTATION

COMMITMENT:

- a. The seismic monitoring instrumentation shown in Table 16.7-2A shall be OPERABLE.

APPLICABILITY:

At all times.

REMEDIAL ACTION:

- a. With one or more of the above required seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each of the above required seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 16.7-2B.
- b. Each of the above accessible seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours following the seismic event. Data shall be retrieved from actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. Data retrieved from the triaxial time-history accelerograph shall include a post-event CHANNEL CALIBRATION obtained by actuation of the internal test and calibrate function immediately prior to removing data. CHANNEL CALIBRATION shall be performed immediately after insertion of the new recording media in the triaxial time-history accelerograph recorder. A Special Report shall be prepared and submitted to the Commission pursuant to Technical Specification 6.9.2 within 10 days describing the magnitude, frequency spectrum, and resultant effect upon facility features important to safety.

REFERENCES: N/A

BASES:

16.7-2 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

TABLE 16.7-2A

SEISMIC MONITORING INSTRUMENTATION

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM INSTRUMENTS OPERABLE</u>
1. Triaxial Time-History Accelerographs		
a. 1MIMT 5070 (Remote Sensor A) Containment Base Slab	-1 g to + 1 g	1
b. 1MIMT 5080 (Remote Sensor B) Containment Vessel Elev 619'5"	-1 g to + 1 g	1
c. 1MIMT 5090 (Starter Unit) Containment Base Slab	0.005 g to 0.05 g	1
2. Triaxial Peak Accelerographs		
a. 1MIMT 5010 - Containment Bldg. Elev 588' + 6 1/8"	0 g to + 2 g	1
b. 1MIMT 5020 - Containment Bldg. Elev 567'2 1/2"	0 g to + 2 g	1
c. 1MIMT 5030 - Auxiliary Bldg. Elev 543'	0 g to + 2 g	1
3. Triaxial Seismic Switch		
1MIMT 5000 - Containment Base Slab	0.025 g to 0.25 g	1*
4. Triaxial Response-Spectrum Recorders		
a. 1MIMT 5040 - Containment Base Slab	0 to 34 g at 2 to 25 Hz	1*
b. 1MIMT 5050 - Containment Bldg. Elev 579'3 1/2"	0 to 34 g at 2 to 25 Hz	1
c. 1MIMT 5060 - Auxiliary Bldg. Elev 577'	0 to 34 g at 2 to 25 Hz	1

*With reactor control room indication.

TABLE 16.7-2B

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>
1. Triaxial Time-History Accelerographs			
a. 1MIMT 5070 (Remote Sensor A) Containment Base Slab	M*	R	SA
b. 1MIMT 5080 (Remote Sensor B) Containment Vessel Elev 619'5"	M*	R	SA
c. 1MIMT 5090 (Starter Unit) Containment Base Slab	N.A.	R	SA
2. Triaxial Peak Accelerographs			
a. 1MIMT 5010 - Containment Bldg. Elev 588' + 6 1/8"	N.A.	R	N.A.
b. 1MIMT 5020 - Containment Bldg. Elev 567' 2 1/2"	N.A.	R	N.A.
c. 1MIMT 5030 - Auxiliary Bldg. Elev 543'	N.A.	R	N.A.
3. Triaxial Seismic Switch			
1MIMT 5000 - Containment Base Slab**	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. 1MIMT 5040 - Containment Base Slab**	M	R	SA
b. 1MIMT 5050 - Containment Bldg. Elev 579' 3 1/2"	N.A.	R	N.A.
c. 1MIMT 5060 - Auxiliary Bldg. Elev 577'	N.A.	R	N.A.

*Except seismic trigger.

**With reactor control room indications.

16.7 INSTRUMENTATION

16.7-3 METEOROLOGICAL INSTRUMENTATION

COMMITMENT:

- a. The meteorological monitoring instrumentation channels shown in Table 16.7-3A shall be OPERABLE.

APPLICABILITY:

At all times.

REMEDIAL ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 16.7-3B.

REFERENCES: N/A

BASES:

16.7-3 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972.

TABLE 16.7-3A

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>MINIMUM OPERABLE</u>
1. Wind Speed		
a. Meteorological Tower	Nominal Elev. 661'10"	1
b. Meteorological Tower	Nominal Elev. 768'10"	1
2. Wind Direction		
a. Meteorological Tower	Nominal Elev. 661'10"	1
b. Meteorological Tower	Nominal Elev. 768'10"	1
3. Air Temperature - ΔT		
Meteorological Tower	Nominal Elev. 768'10"-661'10"	1

TABLE 16.7-3B

METEOROLOGICAL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wind Speed		
a. Nominal Elev. 661' 10"	D	SA
b. Nominal Elev. 768' 10"	D	SA
2. Wind Direction		
a. Nominal Elev. 661' 10"	D	SA
b. Nominal Elev. 768' 10"	D	SA
3. Air Temperature - ΔT		
Nominal Elev. 768'10" - 661'10"	D	SA

16.7

INSTRUMENTATION

16.7-4 LOOSE-PART DETECTION SYSTEM

COMMITMENT:

The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY:

MODES 1 and 2.

REMEDIAL ACTION:

- a. With one or more Loose-Part Detection System channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each channel of the Loose-Part Detection Systems shall be demonstrated OPERABLE by performance of:
 1. A CHANNEL CHECK at least once per 24 hours,
 2. An ANALOG CHANNEL OPERATIONAL TEST except for verification of Setpoint at least once per 31 days, and
 3. A CHANNEL CALIBRATION at least once per 18 months.

REFERENCES: N/A

BASES:

16.7-4 LOOSE-PART DETECTION SYSTEM

The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the Reactor System and avoid or mitigate damage to Reactor System components. The allowable out-of-service times and surveillance requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.

ATTACHMENT 5b

PROPOSED SELECTED LICENSEE COMMITMENT PAGES FOR MCGUIRE

MC GUIRE NUCLEAR STATION
FINAL SAFETY ANALYSIS REPORT
SELECTED LICENSEE COMMITMENTS
CHAPTER 16.7

INSTRUMENTATION

Table of Contents

16.7-1	ATWS/AMSAC
16.7-2	Seismic Instrumentation
16.7-3	Meteorological Instrumentation
16.7-4	Loose-Part Detection System

16.7 INSTRUMENTATION

16.7-2 SEISMIC INSTRUMENTATION

COMMITMENT:

- a. The seismic monitoring instrumentation shown in Table 16.7-2A shall be OPERABLE.

APPLICABILITY:

At all times.

REMEDIAL ACTION:

- a. With one or more seismic monitoring instruments inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the instrument(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each of the above seismic monitoring instruments shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 16.7-2B.
- b. Each of the above accessible seismic monitoring instruments actuated during a seismic event greater than or equal to 0.01 g shall be restored to OPERABLE status within 24 hours following the seismic event. Data shall be retrieved from accessible actuated instruments and analyzed to determine the magnitude of the vibratory ground motion. Data retrieved from the triaxial time-history accelerograph shall include a post-event CHANNEL CALIBRATION obtained by actuation of the internal test and calibrate function immediately prior to removing data. CHANNEL CALIBRATION shall be performed immediately after insertion of the new recording media in the triaxial time-history accelerograph recorder. A Special Report shall be prepared and submitted to the Commission pursuant to Technical Specification 6.9.2, with a copy to Director, Office of Nuclear Reactor Regulation, Attention: Chief, Structural and Geotechnical Engineering Branch, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, within 10 days describing the magnitude,

frequency spectrum, and resultant effect upon facility features important to safety.

REFERENCES: N/A

BASES:

16.7-2 SEISMIC INSTRUMENTATION

The OPERABILITY of the seismic instrumentation ensures that sufficient capability is available to promptly determine the magnitude of a seismic event and evaluate the response of those features important to safety. This capability is required to permit comparison of the measured response to that used in the design basis for the facility to determine if plant shutdown is required pursuant to Appendix A of 10 CFR Part 100. The instrumentation is consistent with the recommendations of Regulatory Guide 1.12, "Instrumentation for Earthquakes," April 1974.

TABLE 16.7-2A

SEISMIC MONITORING INSTRUMENTATION

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>MEASUREMENT RANGE</u>	<u>MINIMUM INSTRUMENTS OPERABLE</u>
1. Triaxial Time-History Accelerographs		
a. 1MIMT 5000 (Remote Sensor A) Containment Base Slab	0-1g	1
b. 1MIMT 5010 (Remote Sensor B) Containment Wall Elev 786'5"	0-1g	1
c. 1MIMT 5020 (Starter Unit) Containment Base Slab	0.005 - 0.05 g	1
2. Triaxial Peak Accelerographs		
a. 1MIMT 5030 - Containment Bldg. Elev 799' 9 9/16"	0-2g	1
b. 1MIMT 5040 - Containment Bldg. Elev 746' 2 1/2"	0-2g	1
c. 1MIMT 5050 - Auxiliary Bldg. Elev 716' 6"	0-2g	1
3. Triaxial Seismic Switches		
1MIMT 5060 - Containment Base Slab	0.025 to 0.25 g	1*
4. Triaxial Response-Spectrum Recorders		
a. 1MIMT 5070 - Containment Base Slab	0-2g	1*
b. 1MIMT 5080 - Containment Bldg. Elev 751' 8 1/4"	0-2g	1
c. 1MIMT 5090 - Auxiliary Bldg. Elev 750'	0-2g	1

*With reactor control room indication.

TABLE 16.7-2B

SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>INSTRUMENTS AND SENSOR LOCATIONS</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>
1. Triaxial Time-History Accelerographs			
a. 1MIMT 5000 (Remote Sensor A) Containment Base Slab	M*	R	SA
b. 1MIMT 5010 (Remote Sensor B) Containment Wall Elev 786'5"	M*	R	SA
c. 1MIMT 5020 (Starter Unit) Containment Base Slab	N.A.	R	SA
2. Triaxial Peak Accelerographs			
a. 1MIMT 5030 - Containment Bldg. Elev 799' 9 9/16"	N.A.	R	N.A.
b. 1MIMT 5040 - Containment Bldg. Elev 746' 2½"	N.A.	R	N.A.
c. 1MIMT 5050 - Auxiliary Bldg. Elev 716' 6"	N.A.	R	N.A.
3. Triaxial Seismic Switches			
1MIMT 5060 - Containment Base Slab**	M	R	SA
4. Triaxial Response-Spectrum Recorders			
a. 1MIMT 5070 - Containment Base Slab**	M	R	SA
b. 1MIMT 5080 - Containment Bldg. Elev 751' 8 1/4"	N.A.	R	N.A.
c. 1MIMT 5090 - Auxiliary Bldg. Elev 750'	N.A.	R	N.A.

*Except seismic trigger.

**With reactor control room indications.

16.7 INSTRUMENTATION

16.7-3 METEOROLOGICAL INSTRUMENTATION

COMMITMENT:

- a. The meteorological monitoring instrumentation channels shown in Table 16.7-3A shall be OPERABLE.

APPLICABILITY:

At all times.

REMEDIAL ACTION:

- a. With one or more required meteorological monitoring channels inoperable for more than 7 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each of the above meteorological monitoring instrumentation channels shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK and CHANNEL CALIBRATION operations at the frequencies shown in Table 16.7-3B.

REFERENCES: N/A

BASES:

16.7-3 METEOROLOGICAL INSTRUMENTATION

The OPERABILITY of the meteorological instrumentation ensures that sufficient meteorological data are available for estimating potential radiation doses to the public as a result of routine or accidental release of radioactive materials to the atmosphere. This capability is required to evaluate the need for initiating protective measures to protect the health and safety of the public and is consistent with the recommendations of Regulatory Guide 1.23, "Onsite Meteorological Programs," February 1972.

TABLE 16.7-3A

METEOROLOGICAL MONITORING INSTRUMENTATION

<u>INSTRUMENT</u>	<u>LOCATION</u>	<u>MINIMUM OPERABLE</u>
1. Wind Speed		
a. Meteorological Tower	Nominal Elev. 786'	1
b. Meteorological Tower	Nominal Elev. 886'	1
2. Wind Direction		
a. Meteorological Tower	Nominal Elev. 786'	1
b. Meteorological Tower	Nominal Elev. 886'	1
3. Air Temperature - ΔT		
Meteorological Tower	Nominal Elev. 886'-786'	1

TABLE 16.7-3B

METEOROLOGICAL MONITORING INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>
1. Wind Speed		
a. Nominal Elev. 786'	D	SA
b. Nominal Elev. 886'	D	SA
2. Wind Direction		
a. Nominal Elev. 786'	D	SA
b. Nominal Elev. 886'	D	SA
3. Air Temperature - ΔT		
Nominal Elev. 886'- 786'	D	SA

16.7

INSTRUMENTATION

16.7-4 LOOSE-PART DETECTION SYSTEM

COMMITMENT:

- a. The Loose-Part Detection System shall be OPERABLE.

APPLICABILITY:

MODES 1 and 2.

REMEDIAL ACTION:

- a. With one or more Loose-Part Detection System channels inoperable for more than 30 days, prepare and submit a Special Report to the Commission pursuant to Technical Specification 6.9.2 within the next 10 days outlining the cause of the malfunction and the plans for restoring the channel(s) to OPERABLE status.

TESTING REQUIREMENTS:

- a. Each channel of the Loose-Part Detection Systems shall be demonstrated OPERABLE by performance of:
 - 1. A CHANNEL CHECK at least once per 24 hours, and
 - 2. ANALOG CHANNEL OPERATIONAL TEST except for verification of Setpoint at least once per 31 days, and
 - 3. A CHANNEL CALIBRATION at least once per 18 months.

REFERENCES: N/A

BASES:

16.7-4 LOOSE-PART DETECTION INSTRUMENTATION

The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the reactor system and avoid or mitigate damage to reactor system components. The allowable out-of-service times and Surveillance Requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.