No changes - Info. only

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.9 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.2.1 are not exceeded. The Alarm/Trip Setpoints of these channels shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-13.

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel Alarm/Trip Setpoint less conservative than required by the above specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Restore the inoperable instrumentation to OPERABLE status within the time specified in the ACTION or, in lieu of a Licensee Event Report, explain in the next Semiannual Radioactive Effluent Release Report why this inoperability was not corrected within the time specified.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-9.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1.	WASTE GAS HOLDUP SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (Low Range - EMF-50 or 1EMF-36, low-range)	1 per station	***	35
	b. Effluent System Flow Rate Measuring Device	1 per station	*	36
2.	WASTE GAS HOLDUP SYSTEM Explosive Gas Monitoring System			
	a. Hydrogen Monitor	1 per station	**	41
	b. Oxygen Monitors	2 per station	**	39
3.	Condenser Evacuation System			
	Noble Gas Activity Monitor (EMF-33)	1	*	37
4.	Vent System			
	a. Noble Gas Activity Monitor (Low Range - EMF-36)	1	*	37
	b. Iodine Sampler	1	*	40
	c. Particulate Sampler	1	*	40
	d. Flow Rate Monitor	1	*	36
	e. Sampler Minimum Flow Device	1	*	36

No Changes - Info Only

TABLE 3.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
5.	Containment Purge System			
	Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (Low Range - EMF-39)	1	*	38
6.	Auxiliary Building Ventilation System			
	Noble Gas Activity Monitor (EMF-41 or EMF-36)	1	*	37
7.	Fuel Storage Area Ventilation System			
	Noble Gas Activity Monitor (EMF-42 or EMF-36)	1	*	37
8.	Contaminated Parts Warehouse Ventilation System			
	a. Noble Gas Activity Monitor (EMF-53)	1 per station	***	37
	b. Flow Rate Monitor	1 per station	***	36
	c. Sampler Minimum Flow Device	1 per station	***	36
9.	Radwaste Facility Ventilation System			
	a. Noble Gas Activity Monitor (EMF-52)	1 per station	***	37
	b. Flow Rate Monitor	1 per station	***	36
	c. Sampler Minimum Flow Rate	1 per station	***	36
10.	Equipment Staging Building Ventilation System			
	a. Noble Gas Activity Monitor (EMF-59)	1	***	37
	b. Flow Rate Monitor	1	***	36
	c. Sampler Minimum Flow Device	1	***	36

No Changes — Info only

TABLE 3.3-13 (Continued)

TABLE NOTATION

*At all times.
**During WASTE GAS HOLDUP SYSTEM operation.
***During gaseous effluent releases.

ACTION STATEMENTS

ACTION 35 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment for up to 14 days provided that prior to initiating the release:

a. At least two independent samples of the tank's contents are analyzed, and

b. At least two technically qualified members of the facility staff independently verify the discharge valve lineup:

1) The manual portion of the computer input for the release rate calculations performed on the computer, or

2) The entire release rate calculations if such calculations are performed manually.

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 36 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 37 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 12 hours and these samples are analyzed for gross radioactivity within 24 hours.

ACTION 38 - ~~With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately suspend PURGING or VENTING of radioactive effluents via this pathway.~~

Replace w/attached

ACTION 39 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue for up to 14 days. With two channels inoperable, be in at least HOT STANDBY within 6 hours.

ACTION 40 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the effected pathway may continue for up to 30 days provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

ACTION 41 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, suspend oxygen supply to the recombiner.

Amendment No. 17 (Unit 2)
Amendment No. 29 (Unit 1)
~~4/13/83~~

ACTION 38 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately close all direct (unfiltered) paths to the outside environment and monitor EMF-36 to ensure it is not in alarm. Suspend PURGING of radioactive effluents via this pathway as soon as all direct paths are closed.

ATTACHMENT 2

PROPOSED CHANGES FOR CATAWBA

No Changes this page

INSTRUMENTATION

3/4.3.3 MONITORING INSTRUMENTATION

RADIATION MONITORING FOR PLANT OPERATIONS

LIMITING CONDITION FOR OPERATION

3.3.3.1 The radiation monitoring instrumentation channels for plant operations shown in Table 3.3-6 shall be OPERABLE with their Alarm/Trip Setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

a. With a radiation monitoring channel Alarm/Trip Setpoint for plant operations exceeding the value shown in Table 3.3-6, adjust the Setpoint to within the limit within 4 hours or declare the channel inoperable.

b. With one or more radiation monitoring channels for plant operations inoperable, take the ACTION shown in Table 3.3-6.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel for plant operations shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and ANALOG CHANNEL OPERATIONAL TEST operations for the MODES and at the frequencies shown in Table 4.3-3.

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUNCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
1. Containment					
a. Containment Atmosphere - High Gaseous Radioactivity (Low Range - EMF-39)	1	1	All	***	30
b. Reactor Coolant System Leakage Detection					
1) Particulate Radioactivity (Low Range - EMF-38)	N.A.	1	1, 2, 3, 4	N.A.	33
2) Gaseous Radioactivity (Low Range - EMF-39)	N.A.	1	1, 2, 3, 4	N.A.	33
2. Fuel Storage Pool Areas					
a. High Gaseous Radioactivity (Low Range - EMF-42)	1	1	**	$\leq 1.7 \times 10^{-4}$ µCi/ml	34
b. Criticality-Radiation Level (Fuel Bridge - Low Range - 1EMF-15, 2EMF-4)	1	1	*	$\leq$ 15 mR/h	32
3. Control Room					
Air Intake-Radiation Level - High Gaseous Radioactivity (Low Range - EMF-43 A & B)	1/intake	2 (1/intake)	All	$\leq 1.7 \times 10^{-4}$ µCi/ml	31
4. Auxiliary Building Ventilation High Gaseous Radioactivity (Low Range - EMF-41)	1	1	1, 2, 3, 4	$\leq 1.7 \times 10^{-4}$ µCi/ml	35
5 Component Cooling Water System (EMF-46 A&B)	1	1	All	$\leq 1 \times 10^{-3}$ µCi/ml	5

No change this page

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

* With fuel in the fuel storage pool areas.
** With irradiated fuel in the fuel storage pool areas.
*** When venting or purging from containment to the atmosphere, the trip setpoint shall not exceed the equivalent limits of Specification 3.11.2.1 in accordance with the methodology and parameters in the ODCM. When not venting or purging in Modes 5 or 6, the alarm setpoint concentration (μCi/ml) shall be such that the actual submersion dose rate would not exceed 5mR/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.

ACTION STATEMENTS

ACTION 30 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately ~~suspend PURGING of radioactive effluents via this pathway~~. close all direct (unfiltered) paths to the outside environment and assure EMF-36 is OPERABLE. Otherwise, suspend PURGING of radioactive effluents via this pathway.

ACTION 31 - With the number of operable channels one less than the Minimum Channels OPERABLE requirement, within 1 hour isolate the affected Control Room Ventilation System intake from outside air with flow through the HEPA filters and carbon adsorbers.

ACTION 32 - With less than the Minimum Channels OPERABLE requirement, operation may continue for up to 30 days provided an appropriate portable continuous monitor with the same Alarm Setpoint is provided in the fuel storage pool area. Restore the inoperable monitors to OPERABLE status within 30 days or suspend all operations involving fuel movement in the fuel building.

ACTION 33 - Must satisfy the ACTION requirement for Specification 3.4.6.1.

ACTION 34 - With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, operation may continue provided the Fuel Handling Ventilation Exhaust System is operating and discharging through the HEPA filters and carbon adsorbers. Otherwise, suspend all operations involving fuel movement in the fuel building.

ACTION 35 - With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, operation may continue provided the Auxiliary Building Filtered Exhaust System is operating and discharging through the HEPA filter and carbon adsorbers.

ACTION 36 - With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, operation may continue for up to 30 days provided that, at least once per 12 hours, grab samples are collected and analyzed for radioactivity (gross gamma) at a lower limit of detection of no more than 10^{-7} μCi/ml.

No changes this page

INSTRUMENTATION

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.11 The radioactive gaseous effluent monitoring instrumentation channels shown in Table 3.3-13 shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specifications 3.11.2.1 and 3.11.2.5 are not exceeded. The Alarm/Trip Setpoints of these channels meeting Specification 3.11.2.1 shall be determined and adjusted in accordance with the methodology and parameters in the ODCM.

APPLICABILITY: As shown in Table 3.3-13.

ACTION:

a. With a radioactive gaseous effluent monitoring instrumentation channel Alarm/Trip Setpoint less conservative than required by the above specification, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel, or declare the channel inoperable.

b. With less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE, take the ACTION shown in Table 3.3-13. Restore the inoperable instrumentation to OPERABLE status within the time specified in the ACTION, or explain in the next Semiannual Radioactive Effluent Release Report pursuant to Specification 6.9.1.7 why this inoperability was not corrected within the time specified.

c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.11 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and ANALOG CHANNEL OPERATIONAL TEST operations at the frequencies shown in Table 4.3-9.

TABLE 3.3-13

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
1.	WASTE GAS HOLDUP SYSTEM			
	a. Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (Low Range - EMF-50)	1 per station	*	45
	b. Effluent System Flow Rate Measuring Device	1 per station	*	46
2.	WASTE GAS HOLDUP SYSTEM Explosive Gas Monitoring System			
	a. Hydrogen Monitors	1/train per station	**	51
	b. Oxygen Monitors	2/train per station	**	49
3.	Condenser Evacuation System Noble Gas Activity Monitor (Low Range - EMF-33)	1	1, 2, 3, 4	47
4.	Vent System			
	a. Noble Gas Activity Monitor (Low Range - EMF-36)	1	*	47
	b. Iodine Sampler (EMF-37)	1	*	50
	c. Particulate Sampler (EMF-35)	1	*	50
	d. Flow Rate Monitor	1	*	46
	e. Sampler Flow Rate Monitor	1	*	46

No changes this page

TABLE 3.3-13 (Continued)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

	INSTRUMENT	MINIMUM CHANNELS OPERABLE	APPLICABILITY	ACTION
5.	Containment Purge System			
	Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (Low Range - EMF-39)	1	***	48
6.	Containment Air Release and Addition System			
	Noble Gas Activity Monitor - Providing Alarm (Low Range - EMF-39)	1	*	45

No change this page

TABLE 3.3-13 (Continued)

TABLE NOTATIONS

* At all times except when the isolation valve is closed and locked.

** During WASTE GAS HOLDUP SYSTEM operation.

*** At all times.

ACTION STATEMENTS

ACTION 45 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the tank(s) may be released to the environment for up to 14 days provided that prior to initiating the release either:

a. Vent system noble gas activity monitor providing alarm and automatic termination of release (Low Range - EMF-36) has at least one channel OPERABLE, or

b. At least two independent samples of the tank's contents are analyzed, and at least two technically qualified members of the facility staff independently verify:

1. The discharge valve lineup, and

2. The manual portion of the computer input for the release rate calculations performed on the computer, or the entire release rate calculations if such calculations are performed manually.

Otherwise, suspend release of radioactive effluents via this pathway.

ACTION 46 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided the flow rate is estimated at least once per 4 hours.

ACTION 47 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue for up to 30 days provided grab samples are taken at least once per 12 hours and these samples are analyzed for radioactivity within 24 hours.

ACTION 48 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, immediately ~~suspend PURGING of radioactive effluents via this pathway~~. close all direct (unfiltered) paths to the outside environment and assure EMF-36 is OPERABLE. Otherwise, suspend PURGING of radioactive effluents via this pathway.

No changes this page

TABLE 3.3-13 (Continued)

TABLE NOTATIONS

ACTION 49 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, operation of this system may continue provided grab samples are taken and analyzed at least once per 24 hours. With both channels inoperable, operation may continue provided grab samples are taken and analyzed at least once per 4 hours during degassing operations and at least once per 24 hours during other operations.

ACTION 50 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via the affected pathway may continue for up to 30 days provided samples are continuously collected with auxiliary sampling equipment as required in Table 4.11-2.

ACTION 51 - With the number of channels OPERABLE one less than required by the Minimum Channels OPERABLE requirement, suspend oxygen supply to the recombiner.

ATTACHMENT 3

JUSTIFICATION AND SAFETY ANALYSIS
FOR MCGUIRE CHANGES

Justification and Safety Analysis

The proposed changes to the McGuire Nuclear Station Technical Specifications seek to clarify the operability requirements of the Containment Purge System low range noble gas activity monitor, EMF-39. The present Specifications require the monitors to be operable providing alarm and automatic termination of release at all times. An event at McGuire in 1987 (reference LER 370/87-06 dated June 29, 1987) demonstrated that this needs to be reconsidered.

The event involved the loss of flow to the monitor while the unit (McGuire Unit 2) was in no mode status (no fuel in the reactor or containment buildings) with the equipment hatch open. Briefly, when flow to the monitor was lost, the equipment hatch could not be closed due to a problem with the equipment hatch gasket. Operators made the decision to continue containment purge to prevent any unfiltered release to the environment through the equipment hatch. When it was determined that no radiological hazard existed in containment, the purge system was secured in accordance with Technical Specifications.

The proposed changes to the McGuire Technical Specifications seek to change the required compensatory actions (ACTION statements) in the event EMF-39 is inoperable as to take credit for the unit vent noble gas monitor, EMF-36.

If EMF-39 detects high radiation, it will send a signal to the solid state protection system (energizing relay K615) which will isolate the containment purge (VP) system. The SSPS will also isolate VP on a safety injection (phase "A" containment isolation) signal, independent of the status of EMF-39.

While the SSPS may be removed from service below Mode 4, temporary wiring may be installed to maintain power to relay K615. While this maintains the automatic isolation capability of the EMF under these circumstances, it does not take into account the possible inoperability of the monitor itself, as occurred in the referenced Licensee Event Report.

The automatic isolation capability of the containment purge system is also required by Specification 3.3.2, Table 3.3-3, Item 3.C for Modes 1,2,3, and 4. While this involves redundant requirements in the Technical Specifications, the point to be noted here is that the revised action statement to take credit for EMF-36 is preempted by the more conservative action statement in Modes 1-4 (requiring closure of the containment purge supply and exhaust valves) presently in the Technical Specifications. The proposed changes, therefore will have no effect in Modes 1,2,3, and 4. In any case, McGuire does not operate the containment purge system in Modes 1-4.

The proposed change will therefore only affect operation in Modes 5, 6, and no mode status. The accidents considered with the reactor in these modes are the boron dilution accident and the fuel handling accident.

In Mode 5, Cold Shutdown, a fuel handling accident in containment is not possible. A boron dilution incident in Mode 5 is possible, however is highly improbable. As discussed in FSAR Section 15.4.6, conscious operator action is required to initiate boron dilution and sufficient time is available for the operators to terminate the dilution and reborate the system prior to criticality.

In Mode 6, refueling, the primary accident of concern is the fuel handling accident. While EMF-39 may be inoperable during refueling and thus unavailable for automatic isolation of containment purge, the unit vent monitor, EMF-36 will

be available to alert operators (by annunciator alarm) to isolate the release. Additionally, Specification 3.9-5 requires direct communication between refueling personnel and the control room.

A boron dilution event may occur during refueling, however, again conscious operator action is required to initiate dilution. This is discussed in the McGuire FSAR, Section 15.4.5. Should a boron dilution be initiated, the operator would have nearly an hour to recognize the high count rate (from the source range detectors) and terminate the dilution. This assures that no criticality can occur during refueling which, by ruling out fuel damage as a release source, precludes any large releases of fission products.

The proposed revised Action statement for an inoperable monitor would take credit for the unit vent noble gas monitor, EMF-36. Specification 3.3.2 requires monitor EMF-39 and its automatic isolation function to be Operable in Modes 1,2,3 and 4 with the Action statement requiring the purge supply and exhaust valves to be maintained closed should the automatic isolation capability be inoperable. As the existing Action 17 of Table 3.3-3 is more conservative than the proposed Action 38 of Table 3.3-13, it (the existing Action 17) would preempt the proposed Action in Modes 1,2,3, and 4; therefore the only effect is in Modes 5 and 6 (when no fuel is being moved inside containment), and when the unit is in "no mode" status.

The accidents considered in Modes 5 and 6 are the boron dilution accident and the fuel handling accident. As previously discussed, the analyses for these accidents are unaffected by the operability of EMF-39, and no credit is taken for the termination of a release due to EMF-39. Therefore, no margins of safety as presented in the FSAR are affected.

Analysis of Significant Hazards Considerations

Pursuant to 10CFR 50.91, provided is an analysis conforming to the standards of 10CFR 50.92 to conclude that the proposed changes to the McGuire and Nuclear Station Technical Specifications do not involve any significant hazards considerations.

(1) The proposed changes would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The accidents that have been evaluated for Modes 5 and 6 (and "no mode" status) are the boron dilution accident and the fuel handling accident. the function of the monitors is to alert operators to a radioactive release and quantify and terminate the release. The monitors do not affect any accident initiating scenarios. Conscious operator action is required to initiate boron dilution and sufficient time exists to terminate the event before a criticality occurs; no releases occur for this sequence. The fuel handling accident during refueling may result in an offsite release if EMF-39 is not available to automatically terminate the release; however, the analysis of the fuel handling accident as presented in the McGuire FSAR, Section 15.7.4.1 takes no credit for release reduction due to containment isolation. Therefore, the consequences of the accident as analyzed are unaffected by the operability of EMF-39, and in fact would be less than FSAR doses if the purge system is isolated by EMF-39 or manually in response to EMF-36.

(2) The proposed change would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve any hardware changes as to create any new accident scenarios. The active function of the monitors are merely to provide alarm, and in the case of EMF-39, isolate the containment purge system (though not assumed in the safety analysis). There are no equipment or system interfaces (or changes thereto) that may create a new accident sequence.

(3) The proposed changes would not involve a significant reduction in a margin of safety.

The proposed changes will not affect any margins of safety as stated in the FSAR. The only potentially affected safety function is the automatic isolation function of EMF-39. If EMF-39 is disabled during a fuel handling accident, the operators may manually isolate containment purge in response to EMF-36 alarming or communications from containment. In any event, the FSAR analysis assumes no containment isolation occurs to reduce offsite doses. The offsite doses for the fuel handling accident, as presented in McGuire FSAR Table 15.0.11-1 and associated margins to 10CFR 100 limits, are unaffected.

Based upon the preceding analyses, Duke Power concludes that the proposed changes to the McGuire Nuclear Station Technical Specifications do not involve any significant hazards considerations.

ATTACHMENT 4

JUSTIFICATION AND SAFETY ANALYSIS
FOR CATAWBA CHANGES

Justification and Safety Analysis

The proposed changes to the Catawba Nuclear Station Technical Specifications seek to clarify the operability requirements of the Containment Purge System low range noble gas activity monitor, EMF-39. The present Specifications require the monitors to be operable providing alarm and automatic termination of release at all times. An earlier event at McGuire (reference LER 370/87-06 dated June 29, 1987) demonstrated that this needs to be reconsidered.

The event involved the loss of flow to the monitor while the unit (McGuire Unit 2) was in no mode status (no fuel in the reactor or containment buildings) with the equipment hatch open. Briefly, when flow to the monitor was lost, the equipment hatch could not be closed due to a problem with the equipment hatch gasket. Operators made the decision to continue containment purge to prevent any unfiltered release to the environment through the equipment hatch. When it was determined that no radiological hazard existed in containment, the purge system was secured in accordance with Technical Specifications.

The proposed changes to the Catawba Technical Specifications seek to change the required compensatory actions (ACTION statements) in the event EMF-39 is inoperable as to take credit for the unit vent noble gas monitor, EMF-36.

If EMF-39 detects high radiation, it will send a signal to the solid state protection system (energizing relay K615) which will isolate the containment purge (VP) system. The SSPS will also isolate VP on a safety injection (phase "A" containment isolation) signal, independent of the status of EMF-39.

While the SSPS may be removed from service below Mode 4, temporary wiring may be installed to maintain power to relay K615. While this maintains the automatic isolation capability of the EMF under these circumstances, it does not take into account the possible inoperability of the monitor itself, as occurred in the referenced Licensee Event Report

The automatic isolation capability of the containment purge system is also required by Specification 3.3.2, Table 3.3-3, Item 3.C for Modes 1,2,3, and 4. While this involves redundant requirements in the Technical Specifications, the point to be noted here is that the revised action statement to take credit for EMF-36 is preempted by the more conservative action statement in Modes 1-4 (requiring closure of the containment purge supply and exhaust valves) presently in the Technical Specifications. The proposed changes, therefore will have no effect in Modes 1,2,3, and 4.

The proposed change will therefore only affect operation in Modes 5, 6, and no mode status. The accidents considered with the reactor in these modes are the boron dilution accident and the fuel handling accident.

In Mode 5, Cold Shutdown, a fuel handling accident in containment is not possible. A boron dilution incident in Mode 5 is possible, however is highly improbable. As discussed in FSAR Section 15.4.6, conscious operator action is required to initiate boron dilution and sufficient time is available for the operators to terminate the dilution and reborate the system prior to criticality.

In Mode 6, refueling, the primary accident of concern is the fuel handling accident. While EMF-39 may be inoperable during refueling and thus unavailable for automatic isolation of containment purge, the unit vent monitor, EMF-36, will be available for automatic isolation of releases from the unit vent. In any

case, the analysis and dose assessment in the Catawba FSAR, Section 15.7.4.2.2 does not take credit for isolating the release and doses are within 10CFR 100 limits, thus no margins of safety are affected.

A boron dilution event may occur during refueling, however, again conscious operator action is required to initiate dilution. This is discussed in the Catawba FSAR, Section 15.4.6. Should a boron dilution be initiated, the operator would have nearly an hour to recognize the high count rate (from the source range detectors) and terminate the dilution.

Additional assurance exists at Catawba due to the automatic actuation of the Boron Dilution Mitigation System. The details of this system and its actuation, logic and alignments are discussed in the Catawba FSAR, Section 15.4.6. This assures that no criticality can occur in Modes 5 and 6 which, by ruling out fuel damage as a release source, precludes any large releases of fission products.

The proposed revised Action statement for an inoperable monitor would take credit for the unit vent noble gas monitor, EMF-36. Specification 3.3.2 requires monitor EMF-39 and its automatic isolation function to be Operable in Modes 1,2,3 and 4 with the Action statement requiring the purge supply and exhaust valves to be maintained closed should the automatic isolation capability be inoperable. As the existing Action 17 of Table 3.3-3 is more conservative than the proposed Action 48 for Catawba of Table 3.3-13, it (the existing Action 17) would preempt the proposed Action in Modes 1,2,3, and 4; therefore the only effect is in Modes 5 and 6, and when the unit is in "no mode" status.

The proposed change to Table 3.3-6 (Specification 3.3.3.1) Action 30 is to ensure consistency of required compensatory measures for an inoperable piece of equipment. While this involves multiple specifications governing a single monitor, deletion from Specification 3.3.1 is not practical due to specification of the trip setpoint, nor is deletion from Specification 3.3.11 practical due to additional surveillance requirements.

The accidents considered in Modes 5 and 6 are the boron dilution accident and the fuel handling accident. As previously discussed, the analyses for these accidents are unaffected by the operability of EMF-39, and no credit is taken for the termination of a release due to EMF-39 or EMF-36. Therefore, no margins of safety as presented in the FSAR are affected.

Analysis of Significant Hazards Considerations

Pursuant to 10CFR 50.91, provided is an analysis conforming to the standards of 10CFR 50.92 to conclude that the proposed changes to the Catawba Nuclear Station Technical Specifications do not involve any significant hazards considerations.

(1) The proposed changes would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The accidents that have been evaluated for Modes 5 and 6 (and "no mode" status) are the boron dilution accident and the fuel handling accident. The function of the monitors is to alert operators to a radioactive release and quantify and terminate the release. The monitors do not affect any accident initiating scenarios. Conscious operator action is required to initiate boron dilution. Sufficient time exists for automatic actuation of the boron dilution mitigation system to

terminate the event before a criticality occurs; thus no releases occur for this sequence. The fuel handling accident during refueling may result in an offsite release if EMF-39 is not available to automatically terminate the release; however, EMF-36 will be available to terminate the release, and the analysis of the fuel handling accident as presented in the Catawba FSAR, Section 15.7.4.2.2, takes no credit for release reduction due to containment isolation. Therefore, the consequences of the accident as analyzed are unaffected by the operability of EMF-39, and in fact would be less than FSAR doses if the purge system is isolated by EMF-39 or in response to EMF-36.

(2) The proposed change would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not involve any hardware changes as to create any new accident scenarios. The active function of the monitors are merely to provide alarm, and in the case of EMF-39, isolate the containment purge system (though not assumed in the safety analysis). There are no equipment or system interfaces (or changes thereto) that may create a new accident sequence.

(3) The proposed changes would not involve a significant reduction in a margin of safety.

The proposed changes will not affect any margins of safety as stated in the FSAR. The only potentially affected safety function is the automatic isolation function of EMF-39. If EMF-39 is disabled during a fuel handling accident, the operators may manually isolate containment purge in response to EMF-36 alarming or communications from containment. In any event, the FSAR analysis assumes no containment isolation occurs to reduce offsite doses. The offsite doses for the fuel handling accident, as presented in Catawba FSAR Table 15.0.12-1 and associated margins to 10CFR 100 limits, are unaffected.

Based upon the preceding analyses, Duke Power concludes that the proposed changes to the Catawba Nuclear Station Technical Specifications do not involve any significant hazards considerations.