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M. S. Tuckman
Executive Vice President
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April 18, 2000

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

SUBJECT: Duke Energy Corporation
Catawba Nuclear Station Units 1 and 2
Docket Nos. 50-413, 50-414

License Amendment Request for
Technical Specification 3.7.10, Control Room Area Ventilation System; and Technical Specification 3.7.12, Auxiliary Building Filtered Ventilation Exhaust System

REFERENCES: Listed in Attachment 6

Pursuant to 10CFR50.90, attached is a Duke Energy Corporation license amendment request (LAR) for the Catawba Nuclear Station Facility Operating License and Technical Specifications (TS). This LAR addresses degraded pressure boundaries for two ventilation systems at Catawba.

This LAR applies to Catawba TS 3.7.10 and 3.7.12. The changes proposed to these TS address degraded pressure boundaries on the Auxiliary Building Filtered Ventilation Exhaust System and the Control Room Area Ventilation System.

For Catawba TS 3.7.10 and 3.7.12, the changes proposed in this LAR add Notes which allow the affected ventilation system boundaries to be opened intermittently under administrative control. Also for Catawba TS 3.7.10 and 3.7.12, the changes proposed in this LAR add a new condition. This new condition requires that the boundaries for these two systems be returned to an operable status within 24 hours, when both trains of these systems are inoperable due to an inoperable boundary. As discussed in Attachment 3, Duke has used risk-informed techniques to

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demonstrate the acceptability of the new condition being proposed for the two Catawba TS.

The proposed changes to Catawba TS 3.7.10 and 3.7.12 are consistent with a generic change proposed by Industry/TSTF Standard Technical Specification Change Traveler TSTF-287, Rev. 5 (Reference 5). These changes are also consistent with emergency/exigent LARs for McGuire Nuclear Station that were submitted by Duke letters to the NRC dated June 10, 1999 (Reference 1) and September 13, 1999 (Reference 3). These McGuire LARs have been approved and issued by NRC letters/safety evaluations dated June 11, 1999 (Reference 2) and September 22, 1999 (Reference 4). Duke is pursuing the changes affecting the ventilation systems pressure boundaries on a proactive basis. This is being done in order to avoid the possible need for emergency/exigent licensing actions at Catawba in the future.

The contents of this amendment package are as follows:

- An Affidavit

- Attachment 1 provides a marked copy of the existing Technical Specifications for Catawba Units 1 and 2. These marked copies show the proposed changes. The proposed changes are numbered consistent with the description contained in Attachment 3.

- Attachment 2 provides the reprinted Technical Specifications pages for Catawba Units 1 and 2.

- Attachment 3 provides a Description of the Proposed Changes and Technical Justification.

- Pursuant to 10CFR50.92, Attachment 4 documents the determination that this LAR contains No Significant Hazards Consideration.

- Pursuant to 10CFR51.22(c)(9), Attachment 5 provides the basis for the categorical exclusion from performing an Environmental Assessment/Impact Statement.

- Attachment 6 provides a list of reference documents that are applicable to this LAR.

Implementation of this LAR in the Facility Operating License and Technical Specifications will not impact the Catawba Updated Final Safety Analysis Report.

In accordance with Duke administrative procedures and the Quality Assurance Program Topical Report, the changes contained in this LAR have been reviewed and approved by the Catawba Plant Operations Review Committee and the Duke Corporate Nuclear Safety Review Board.

Pursuant to 10CFR50.91, a copy of this LAR is being sent to the State of South Carolina.

Implementation of the changes proposed in this LAR at Catawba will provide additional operational flexibility without a significant increase in risk. Duke Energy Corporation is requesting NRC review and approval of this LAR by October 18, 2000. It has been determined that the NRC's standard 30-day implementation grace period will be adequate for this LAR.

Within this submittal package (see Attachment 3), Duke Energy Corporation makes the following commitment:

> At the time of implementation of the applicable changes contained in this LAR, Catawba will have approved, written administrative controls in place that describe the compensatory measures to be taken when the affected pressure boundaries are opened.

Inquiries on this matter should be directed to J. S. Warren at (704) 382-4986.

Very truly yours,

M. S. Tuckman

xc w/Attachments:

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NRIA File/ELL
Catawba Group File: 801.01 (T. K. Pasour)
Catawba Document Control File: 801.01 (T. K. Pasour)

AFFIDAVIT

M. S. Tuckman, being duly sworn, states that he is Executive Vice President of Duke Energy Corporation; that he is authorized on the part of said corporation to sign and file with the Nuclear Regulatory Commission these amendments to the Catawba Nuclear Station Facility Operating Licenses Nos. NPF-35 and NPF-52 and associated Technical Specifications; and that all statements and matters set forth within this submittal dated April 18, 2000 are true and correct to the best of his knowledge.

M. S. Tuckman

M. S. Tuckman, Executive Vice President

Subscribed and sworn to me: April 18, 2000
Date

Mary P. Nelms, Notary Public

My commission expires: JAN 22, 2001

SEAL

Attachment 1

Catawba Units 1 and 2 Technical Specifications

Marked Pages

3.7 PLANT SYSTEMS

3.7.10 Control Room Area Ventilation System (CRAVS)

Proposed Change #1

LCO 3.7.10 Two CRAVS trains shall be OPERABLE.

← INSERT 1 LCO NOTE

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies,
During CORE ALTERATIONS.

ACTIONS –

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRAVS train inoperable.	A.1 Restore CRAVS train to OPERABLE status.	7 days
~~B.~~ C. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4. (or B)	~~B.~~ C.1 Be in MODE 3. AND ~~B.~~ C.2 Be in MODE 5.	6 hours 36 hours
~~C.~~ D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	~~C.~~ D.1 ----------NOTE---------- Place in high chlorine protection mode if automatic transfer to high chlorine protection mode is inoperable. ---------- Place OPERABLE CRAVS train in operation. OR	 Immediately
B. Two CRAVS trains inoperable due to inoperable control room pressure boundary in MODES 1, 2, 3, or 4.	B.1 Restore control room pressure boundary to OPERABLE status.	24 hours

Proposed Change #2

(continued)

INSERT 1

LCO Note

The control room pressure boundary may be opened intermittently under administrative controls.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
~~C~~. (continued) D	~~C~~.2.1 Suspend CORE ALTERATIONS. D AND ~~C~~.2.2 Suspend movement of irradiated fuel assemblies. D	Immediately Immediately
~~D~~. Two CRAVS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS. E	~~D~~.1 Suspend CORE ALTERATIONS. E AND ~~D~~.2 Suspend movement of irradiated fuel assemblies. E	Immediately Immediately
~~E~~. Two CRAVS trains inoperable in MODE 1, 2, 3, or 4. F	~~E~~.1 Enter LCO 3.0.3. F for reasons other than Condition B	Immediately Proposed Change #3
~~F~~. One or more CRAVS train(s) heater inoperable. G	~~F~~.1 Restore CRAVS train(s) heater to OPERABLE status. G OR ~~F~~.2 Initiate action in accordance with Specification 5.6.6. G	7 days 7 days

BASES

LCO (continued)

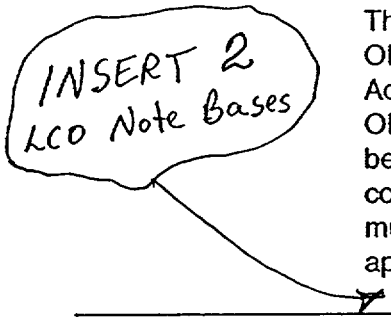
The CRAVS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CRAVS train is OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and carbon adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.



The CRAVS is shared between the two units. The system must be OPERABLE for each unit when that unit is in the MODE of Applicability. Additionally, both normal and emergency power must also be OPERABLE because the system is shared. If a CRAVS component becomes inoperable, or normal or emergency power to a CRAVS component becomes inoperable, then the Required Actions of this LCO must be entered independently for each unit that is in the MODE of applicability of the LCO.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies and during CORE ALTERATIONS, CRAVS must be OPERABLE to control operator exposure during and following a DBA.

During movement of irradiated fuel assemblies and in MODE 6, for CORE ALTERATIONS, the CRAVS must be OPERABLE to cope with the release from a fuel handling accident.

ACTIONS

A.1

When one CRAVS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CRAVS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CRAVS train could result in loss of

INSERT 2

LCO Note Bases

The LCO is modified by a Note allowing the control room pressure boundary to be opened intermittently under administrative controls. For normal entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. During periods when doors are held open, and for other openings, these controls consist of stationing a dedicated individual at the door or opening who is in continuous communication with the control room. This individual will have a method to rapidly close the door or opening when a need for control room pressure boundary isolation is indicated.

BASES

ACTIONS (continued)

CRAVS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

or control room pressure boundary

C C
~~B~~.1 and ~~B~~.2

INSERT 3

In MODE 1, 2, 3, or 4, if the inoperable CRAVS train cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D D D
~~C~~.1, ~~C~~.2.1, and ~~C~~.2.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS, if the inoperable CRAVS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CRAVS train in operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected.

D
An alternative to Required Action ~~C~~.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

D
Required Action ~~C~~.1 is modified by a Note indicating to place the system in the chlorine protection mode if automatic transfer to high chlorine protection mode is inoperable.

E E
~~D~~.1 and ~~D~~.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS, with two CRAVS trains inoperable, action must be taken immediately to suspend activities that could result in a

INSERT 3

B.1

If the control room pressure boundary is inoperable in MODES 1, 2, 3, or 4 such that the CRAVS trains cannot establish or maintain the required pressure, action must be taken to restore an OPERABLE control room pressure boundary within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the availability of the CRAVS to provide a filtered environment (albeit with potential unfiltered control room inleakage), and additional actions consistent with the intent of GDC 19 that are available to the operator to minimize doses (e.g. self contained breathing apparatus and alternate control room air intakes). These actions should be available for intentional and unintentional entry into the condition.

BASES

ACTIONS (continued)

release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

F
~~E~~.1

for reasons other than Condition B,

If both CRAVS trains are inoperable in MODE 1, 2, 3, or 4, the CRAVS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

G G
~~F~~.1 and ~~F~~.2

With one or more CRAVS heaters inoperable, the heater must be restored to OPERABLE status within 7 days. Alternatively, a report must be initiated per Specification 5.6.6, which details the reason for the heater's inoperability and the corrective action required to return the heater to OPERABLE status.

The heaters do not affect OPERABILITY of the CRAVS filter trains because charcoal adsorber efficiency testing is performed at 30°C and 95% relative humidity. The accident analysis shows that site boundary radiation doses are within 10 CFR 100 limits during a DBA LOCA under these conditions.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry out any moisture accumulated in the carbon from humidity in the ambient air. Systems with heaters must be operated from the control room for $\geq$ 10 continuous hours with the heaters energized and flow through the HEPA filters and charcoal adsorbers. The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

3.7 PLANT SYSTEMS

3.7.12 Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)

Proposed Change #4

LCO 3.7.12 Two ABFVES trains shall be OPERABLE.

INSERT 4 LCO NOTE

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ABFVES train inoperable.	A.1 Restore ABFVES train to OPERABLE status.	7 days
~~B.~~ C. Required Action and associated Completion Time not met. of Condition A or B	~~B.~~ C.1 Be in MODE 3. AND ~~B.~~ C.2 Be in MODE 5.	6 hours 36 hours
~~C.~~ D. One or more ABFVES train(s) heater inoperable.	~~C.~~ D.1 Restore ABFVES train(s) heater to OPERABLE status. OR ~~C.~~ D.2 Initiate action in accordance with Specification 5.6.6.	7 days 7 days

Proposed Change # 5

B. Two ABFVES trains inoperable due to inoperable ECCS pump rooms pressure boundary.

B.1 Restore ECCS pump rooms pressure boundary to OPERABLE status. 24 hours

INSERT 4

LCO Note

The ECCS pump rooms pressure boundary may be opened intermittently under administrative controls.

BASES

APPLICABLE SAFETY ANALYSES

The design basis of the ABFVES is established by the large break LOCA. The system evaluation assumes a passive failure of the ECCS outside containment, such as an SI pump seal failure, during the recirculation mode. In such a case, the system limits radioactive release to within the 10 CFR 100 (Ref. 6) limits, or the NRC staff approved licensing basis (e.g., a specified fraction of Reference 6 limits). The analysis of the effects and consequences of a large break LOCA is presented in Reference 4. The ABFVES also actuates following a small break LOCA, to clean up releases of smaller leaks, such as from valve stem packing.

Two types of system failures are considered in the accident analysis: complete loss of function, and excessive LEAKAGE. Either type of failure may result in a lower efficiency of removal for any gaseous and particulate activity released to the ECCS pump rooms following a LOCA.

The ABFVES satisfies Criterion 3 of 10 CFR 50.36 (Ref. 7).

LCO

Two independent and redundant trains of the ABFVES are required to be OPERABLE to ensure that at least one is available, assuming that a single failure disables the other train coincident with loss of offsite power. Total system failure could result in the atmospheric release from the ECCS pump room exceeding 10 CFR 100 limits in the event of a Design Basis Accident (DBA).

ABFVES is considered OPERABLE when the individual components necessary to maintain the ECCS pump room filtration are OPERABLE in both trains.

An ABFVES train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

b. HEPA filter and carbon adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

INSERT 5
LCO Note Bases

The ABFVES fans power supply is provided by buses which are shared between the two units. If normal or emergency power to the ABFVES becomes inoperable, then the Required Actions of this LCO must be entered independently for each unit that is in the MODE of applicability of the LCO.

INSERT 5

LCO Note Bases

The LCO is modified by a Note allowing the ECCS pump rooms pressure boundary to be opened intermittently under administrative controls. For normal entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. During periods when doors are held open, and for other openings, these controls consist of stationing a dedicated individual at the door or opening who is in continuous communication with the control room. This individual will have a method to rapidly close the door or opening when a need for ECCS pump rooms pressure boundary isolation is indicated.

BASES

APPLICABILITY

In MODES 1, 2, 3, and 4, the ABFVES is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.

In MODE 5 or 6, the ABFVES is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one ABFVES train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ABFVES function.

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

Concurrent failure of two ABFVES trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately.

INSERT 6 →

C C
~~B~~.1 and ~~B~~.2

or ECCS pump rooms pressure boundary *

If the ABFVES train cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D D
~~C~~.1 and ~~C~~.2

With one or more ABFVES heaters inoperable, the heater must be restored to OPERABLE status within 7 days. Alternatively, a report must be initiated per Specification 5.6.6, which details the reason for the heater's inoperability and the corrective action required to return the heater to OPERABLE status.

INSERT 6

B.1

If the ECCS pump rooms pressure boundary is inoperable such that the ABFVES trains cannot establish or maintain the required pressure, action must be taken to restore the ECCS pump rooms pressure boundary to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the availability of the ABFVES to provide a filtered release (albeit with the potential for some unfiltered ECCS pump rooms leakage), and additional actions consistent with the intent, as applicable, of GDC 19, 60, 64 and 10CFR100 that are available to plant personnel to minimize doses (e.g. self contained breathing apparatus). These actions should be available for intentional and unintentional entry into the condition.

Attachment 2

Catawba Units 1 and 2 Technical Specifications
Reprinted Pages

Remove Page	Insert Page
3.7.10-1	3.7.10-1
3.7.10-2	3.7.10-2
3.7.10-3	3.7.10-3
B3.7.10-3	B3.7.10-3
B3.7.10-4	B3.7.10-4
B3.7.10-5	B3.7.10-5
B3.7.10-6	B3.7.10-6
	B3.7.10-7
3.7.12-1	3.7.12-1
B3.7.12-3	B3.7.12-3
B3.7.12-4	B3.7.12-4
B3.7.12-5	B3.7.12-5
	B3.7.12-6

3.7 PLANT SYSTEMS

3.7.10 Control Room Area Ventilation System (CRAVS)

LCO 3.7.10 Two CRAVS trains shall be OPERABLE.

----------NOTE----------
The control room pressure boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, 4, 5, and 6,
During movement of irradiated fuel assemblies,
During CORE ALTERATIONS.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRAVS train inoperable.	A.1 Restore CRAVS train to OPERABLE status.	7 days
B. Two CRAVS trains inoperable due to inoperable control room pressure boundary in MODES 1, 2, 3, or 4.	B.1 Restore control room pressure boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met in MODE 1, 2, 3, or 4.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours

(continued

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
D. Required Action and associated Completion Time of Condition A not met in MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	D.1 ----------NOTE---------- Place in high chlorine protection mode if automatic transfer to high chlorine protection mode is inoperable. ---------- Place OPERABLE CRAVS train in operation.	Immediately
	OR	
	D.2.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	D.2.2 Suspend movement of irradiated fuel assemblies.	Immediately
E. Two CRAVS trains inoperable in MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS.	E.1 Suspend CORE ALTERATIONS.	Immediately
	AND	
	E.2 Suspend movement of irradiated fuel assemblies.	Immediately
F. Two CRAVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

(continued

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
G. One or more CRAVS train(s) heater inoperable.	G.1 Restore CRAVS train(s) heater to OPERABLE status. OR G.2 Initiate action in accordance with Specification 5.6.6.	7 days 7 days

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CRAVS train for $\geq$ 10 continuous hours with the heaters operating.	31 days
SR 3.7.10.2	Perform required CRAVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.3	Verify each CRAVS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Verify one CRAVS train can maintain a positive pressure of $\geq$ 0.125 inches water gauge, relative to the adjacent areas during the pressurization mode of operation at a makeup flow rate of $\leq$ 4000 cfm.	18 months on a STAGGERED TEST BASIS

BASES

LCO (continued)

The CRAVS is considered OPERABLE when the individual components necessary to limit operator exposure are OPERABLE in both trains. A CRAVS train is OPERABLE when the associated:

a. Fan is OPERABLE;

b. HEPA filters and carbon adsorbers are not excessively restricting flow, and are capable of performing their filtration functions; and

c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.

In addition, the control room boundary must be maintained, including the integrity of the walls, floors, ceilings, ductwork, and access doors.

The CRAVS is shared between the two units. The system must be OPERABLE for each unit when that unit is in the MODE of Applicability. Additionally, both normal and emergency power must also be OPERABLE because the system is shared. If a CRAVS component becomes inoperable, or normal or emergency power to a CRAVS component becomes inoperable, then the Required Actions of this LCO must be entered independently for each unit that is in the MODE of applicability of the LCO.

The LCO is modified by a Note allowing the control room pressure boundary to be opened intermittently under administrative controls. For normal entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. During periods when doors are held open, and for other openings, these controls consist of stationing a dedicated individual at the door or opening who is in continuous communication with the control room. This individual will have a method to rapidly close the door or opening when a need for control room pressure boundary isolation is indicated.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies and during CORE ALTERATIONS, CRAVS must be OPERABLE to control operator exposure during and following a DBA.

During movement of irradiated fuel assemblies and in MODE 6, for CORE ALTERATIONS, the CRAVS must be OPERABLE to cope with the release from a fuel handling accident.

BASES

ACTIONS

A.1

When one CRAVS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CRAVS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CRAVS train could result in loss of CRAVS function. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

B.1

If the control room pressure boundary is inoperable in MODES 1, 2, 3, or 4 such that the CRAVS trains cannot establish or maintain the required pressure, action must be taken to restore an OPERABLE control room pressure boundary within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the availability of the CRAVS to provide a filtered environment (albeit with potential unfiltered control room inleakage), and additional actions consistent with the intent of GDC 19 that are available to the operator to minimize doses (e.g. self contained breathing apparatus and alternate control room air intakes). These actions should be available for intentional and unintentional entry into the condition.

C.1 and C.2

In MODE 1, 2, 3, or 4, if the inoperable CRAVS train or control room pressure boundary cannot be restored to OPERABLE status within the required Completion Time, the unit must be placed in a MODE that minimizes accident risk. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1, D.2.1, and D.2.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS, if the inoperable CRAVS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CRAVS train in operation. This action ensures that the remaining train is OPERABLE, that no failures preventing automatic actuation will occur, and that any active failure would be readily detected.

BASES

ACTIONS (continued)

An alternative to Required Action D.1 is to immediately suspend activities that could result in a release of radioactivity that might require isolation of the control room. This places the unit in a condition that minimizes risk. This does not preclude the movement of fuel to a safe position.

Required Action D.1 is modified by a Note indicating to place the system in the chlorine protection mode if automatic transfer to high chlorine protection mode is inoperable.

E.1 and E.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, or during CORE ALTERATIONS, with two CRAVS trains inoperable, action must be taken immediately to suspend activities that could result in a release of radioactivity that might enter the control room. This places the unit in a condition that minimizes accident risk. This does not preclude the movement of fuel to a safe position.

F.1

If both CRAVS trains are inoperable in MODE 1, 2, 3, or 4, for reasons other than Condition B, the CRAVS may not be capable of performing the intended function and the unit is in a condition outside the accident analyses. Therefore, LCO 3.0.3 must be entered immediately.

G.1 and G.2

With one or more CRAVS heaters inoperable, the heater must be restored to OPERABLE status within 7 days. Alternatively, a report must be initiated per Specification 5.6.6, which details the reason for the heater's inoperability and the corrective action required to return the heater to OPERABLE status.

The heaters do not affect OPERABILITY of the CRAVS filter trains because charcoal adsorber efficiency testing is performed at 30°C and 95% relative humidity. The accident analysis shows that site boundary radiation doses are within 10 CFR 100 limits during a DBA LOCA under these conditions.

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not too severe, testing each train once every month provides an adequate check of this system. Monthly heater operations dry out any moisture accumulated in the carbon from humidity in the ambient air. Systems with heaters must be operated from the control room for $\geq$ 10 continuous hours with the heaters energized and flow through the HEPA filters and charcoal adsorbers. The 31 day Frequency is based on the reliability of the equipment and the two train redundancy availability.

SR 3.7.10.2

This SR verifies that the required CRAVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRAVS filter tests are in accordance with Regulatory Guide 1.52 (Ref. 5). The VFTP includes testing the performance of the HEPA filter, carbon adsorber efficiency, minimum flow rate, and the physical properties of the activated carbon. Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.10.3

This SR verifies that each CRAVS train starts and operates on an actual or simulated actuation signal. The Frequency of 18 months is specified in Regulatory Guide 1.52 (Ref. 5).

SR 3.7.10.4

This SR verifies the integrity of the control room enclosure, and the assumed inleakage rates of the potentially contaminated air. The control room positive pressure, with respect to potentially contaminated adjacent areas, is periodically tested to verify proper functioning of the CRAVS. During the emergency mode of operation, the CRAVS is designed to pressurize the control room $\geq$ 0.125 inches water gauge positive pressure with respect to adjacent areas in order to prevent unfiltered inleakage. The CRAVS is designed to maintain this positive pressure with one train at a makeup flow rate of 4000 cfm. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with the guidance provided in NUREG-0800 (Ref. 6).

BASES

REFERENCES

1. UFSAR, Section 6.4.

2. UFSAR, Section 9.4.1

3. UFSAR, Chapter 15.

4. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).

5. Regulatory Guide 1.52, Rev. 2.

6. NUREG-0800, Section 6.4, Rev. 2, July 1981.

3.7 PLANT SYSTEMS

3.7.12 Auxiliary Building Filtered Ventilation Exhaust System (ABFVES)

LCO 3.7.12 Two ABFVES trains shall be OPERABLE.

---NOTE---
The ECCS pump rooms pressure boundary may be opened intermittently under administrative control.

APPLICABILITY: MODES 1, 2, 3, and 4.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One ABFVES train inoperable.	A.1 Restore ABFVES train to OPERABLE status.	7 days
B. Two ABFVES trains inoperable due to inoperable ECCS pump rooms pressure boundary.	B.1 Restore ECCS pump rooms pressure boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A or B not met.	C.1 Be in MODE 3. AND C.2 Be in MODE 5.	6 hours 36 hours
D. One or more ABFVES train(s) heater inoperable.	D.1 Restore ABFVES train(s) heater to OPERABLE status. OR D.2 Initiate action in accordance with Specification 5.6.6.	7 days 7 days

BASES

LCO (continued)

The LCO is modified by a Note allowing the ECCS pump rooms pressure boundary to be opened intermittently under administrative controls. For normal entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. During periods when doors are held open, and for other openings, these controls consist of stationing a dedicated individual at the door or opening who is in continuous communication with the control room. This individual will have a method to rapidly close the door or opening when a need for ECCS pump rooms pressure boundary isolation is indicated.

APPLICABILITY

In MODES 1, 2, 3, and 4, the ABFVES is required to be OPERABLE consistent with the OPERABILITY requirements of the ECCS.

In MODE 5 or 6, the ABFVES is not required to be OPERABLE since the ECCS is not required to be OPERABLE.

ACTIONS

A.1

With one ABFVES train inoperable, action must be taken to restore OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the ABFVES function.

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time), and this system is not a direct support system for the ECCS. The 7 day Completion Time is based on the low probability of a DBA occurring during this time period, and ability of the remaining train to provide the required capability.

Concurrent failure of two ABFVES trains would result in the loss of functional capability; therefore, LCO 3.0.3 must be entered immediately.

B.1

If the ECCS pump rooms pressure boundary is inoperable such that the ABFVES trains cannot establish or maintain the required pressure, action must be taken to restore the ECCS pump rooms pressure boundary to OPERABLE status within 24 hours. The 24 hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, the availability of the ABFVES to provide a filtered release

BASES

ACTIONS (continued)

(albeit with the potential for some unfiltered ECCS pump rooms leakage), and additional actions consistent with the intent, as applicable, of GDC 19, 60, 64 and 10CFR100 that are available to plant personnel to minimize doses (e.g. self contained breathing apparatus). These actions should be available for intentional and unintentional entry into the condition.

C.1 and C.2

If the ABFVES train or ECCS pump rooms pressure boundary cannot be restored to OPERABLE status within the associated Completion Time, the unit must be placed in a MODE in which the LCO does not apply. To achieve this status, the unit must be placed in at least MODE 3 within 6 hours, and in MODE 5 within 36 hours. The allowed Completion Times are reasonable, based on experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

D.1 and D.2

With one or more ABFVES heaters inoperable, the heater must be restored to OPERABLE status within 7 days. Alternatively, a report must be initiated per Specification 5.6.6, which details the reason for the heater's inoperability and the corrective action required to return the heater to OPERABLE status.

The heaters do not affect OPERABILITY of the ABFVES filter trains because charcoal adsorber efficiency testing is performed at 30°C and 95% relative humidity. The accident analysis shows that site boundary radiation doses are within 10 CFR 100 limits during a DBA LOCA under these conditions.

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Standby systems should be checked periodically to ensure that they function properly. As the environment and normal operating conditions on this system are not severe, testing each train once a month provides an adequate check on this system. Monthly heater operations dry out any moisture that may have accumulated in the carbon from humidity in the ambient air. Systems with heaters must be operated from the control room $\geq$ 10 continuous hours with flow through the HEPA filters and

BASES

SURVEILLANCE REQUIREMENTS (continued)

charcoal adsorbers and with the heaters energized. The 31 day Frequency is based on the known reliability of equipment and the two train redundancy available.

SR 3.7.12.2

This SR verifies that the required ABFVES testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The ABFVES filter tests are in accordance with Reference 5. The VFTP includes testing HEPA filter performance, carbon adsorbers efficiency, minimum system flow rate, and the physical properties of the activated carbon (general use and following specific operations). Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.12.3

This SR verifies that each ABFVES train starts and operates with flow through the HEPA filters and charcoal adsorbers on an actual or simulated actuation signal. The 18 month Frequency is consistent with that specified in Reference 4.

SR 3.7.12.4

This SR verifies the integrity of the ECCS pump room enclosure. The ability of the ECCS pump room to maintain a negative pressure, with respect to potentially uncontaminated adjacent areas, is periodically tested to verify proper functioning of the ABFVES. During the post accident mode of operation, the ABFVES is designed to maintain a slight negative pressure in the ECCS pump room, with respect to adjacent areas, to prevent unfiltered LEAKAGE. The Frequency of 18 months is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 8).

This test is conducted with the tests for filter penetration; thus, an 18 month Frequency on a STAGGERED TEST BASIS is consistent with that specified in Reference 5.

BASES

REFERENCES

1. UFSAR, Section 6.5.
2. UFSAR, Section 9.4.
3. UFSAR, Section 14.4.
4. UFSAR, Section 15.6.
5. Regulatory Guide 1.52 (Rev. 2).
6. 10 CFR 100.11.
7. 10 CFR 50.36, Technical Specifications, (c)(2)(ii).
8. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.

Attachment 3

Description of Proposed Changes and Technical Justification

This LAR submittal package contains five proposed changes that apply to the Catawba Nuclear Station Technical Specifications. Each of the proposed changes is described and justified in the subsequent paragraphs. Each of the proposed changes discussed below is identified by a change number and this number is also shown adjacent to the corresponding change on the marked-up Technical Specifications (TS) pages contained in Attachment 1.

The proposed changes to the Catawba TS are described below. The proposed changes establish actions to be taken for inoperable CRAVS and ABFVES pressure boundaries.

The proposed changes are described as follows:

Description of Proposed Change #1 (LCO 3.7.10)

A note is being added to LCO 3.7.10 for the CRAVS to allow the control room pressure boundary to be opened intermittently under administrative control. Corresponding Bases have been added which establish the administrative controls that are required to minimize the consequences of the open pressure boundary.

Description of Proposed Change #2 (LCO 3.7.10)

A new Condition B is being added to LCO 3.7.10 to specify that 24 hours are allowed to restore an inoperable control room pressure boundary to operable status. Corresponding Bases are also added to support this change. Corresponding changes to the numbering order of the existing conditions/bases are made.

Description of Proposed Change #3 (LCO 3.7.10)

Condition E (new condition F) of LCO 3.7.10 for two inoperable CRAVS trains in Modes 1 - 4 is being modified to exclude entry into this condition when the trains are inoperable because of the degraded control room pressure boundary. The associated Bases for this condition are revised accordingly.

Description of Proposed Change #4 (LCO 3.7.12)

A note is being added to LCO 3.7.12 for the ABFVES to allow the ECCS pump rooms pressure boundary to be opened intermittently

under administrative control. Corresponding Bases have been added which establish the administrative controls that are required to minimize the consequences of the open pressure boundary.

Description of Proposed Change #5 (LCO 3.7.12)

A new Condition B is being added to LCO 3.7.12 to specify that 24 hours are allowed to restore an inoperable ECCS pump rooms pressure boundary to operable status. Corresponding Bases are also added to support this change. Corresponding changes to the numbering order of the existing conditions/bases are made.

Technical Justification for Proposed Changes #1 through #5

Background

The existing LCO surveillance requirements for Catawba TS 3.7.10 and 3.7.12 test the integrity of the applicable boundaries and require a positive or negative pressure limit to be satisfied with one required ventilation train operating. While other surveillance requirements in the same specifications test the operability and function of the ventilation trains, the pressure tests ensure that the boundaries' leak tightness is adequate to meet design assumptions. Currently, there are no corresponding conditions, required actions, or completion times specified in Catawba LCOs 3.7.10 and 3.7.12 should the applicable ventilation pressure boundary surveillance not be met. Under the existing specifications, LCO 3.0.3 must be entered (for two-train inoperability). Requiring the plant to enter LCO 3.0.3 when the ventilation pressure boundary is not intact does not provide time to perform required repairs or corrective maintenance activities. The changes proposed in this LAR are consistent with recent licensing actions submitted for NRC generic approval by the Industry Technical Specifications Task Force in Standard Technical Specifications Traveler TSTF-287, Rev. 5 and recent McGuire emergency and exigent LARs that are discussed below. The proposed changes to Catawba TS 3.7.10 and 3.7.12 are also similar to the existing LCO in TS 3.6.16 for the Reactor Building. LCO 3.6.16 allows 24 hours to restore the Reactor Building envelope to operable status before requiring an orderly shutdown from operating conditions.

Attachment 3

Discussion

There are currently no LCO or Bases notes in Catawba TS 3.7.10 and 3.7.12 that address the opening of the pressure boundary intermittently under administrative control. The proposed TS changes would allow intermittent opening of the applicable ventilation pressure boundary under administrative control at Catawba. The proposed administrative controls establish appropriate compensatory measures to minimize the consequences of an event during this time. For example, when the control room pressure boundary is opened for other than normal entry through doors, the proposed Bases would require that a dedicated individual be stationed in the area. This individual must be in continuous communication with the control room in order to rapidly restore the pressure boundary if needed. Catawba will have approved written administrative controls that describe the compensatory measures to be taken when the pressure boundaries are opened.

As discussed in the subsequent paragraphs, the acceptability of the new conditions being added to Catawba TS 3.7.10 and 3.7.12 was investigated from a probabilistic approach.

The probability of an accident during the 24-hour period of CRAVS inoperability is small. In support of this LAR, the probability of occurrence of three accidents was investigated. These are a core damage accident, a LOCA, and a steam generator tube rupture (SGTR). The most severe condition of the three, a core damage accident, is estimated to occur with a probability of approximately 4E-07. The probability of a LOCA, a less severe condition, is estimated to have a probability of occurrence of approximately 2E-05. The probability of a SGTR, which is the least severe event of the three that were investigated, is estimated to occur with a probability of approximately 7E-05.

Since the ABFVES is not shared between units, the estimated probabilities of an accident during the 24-hour period of inoperability are half the CRAVS values presented above. Therefore, for the ABFVES inoperability, a core damage accident is estimated to have a probability of occurrence of 2E-07, the probability of a LOCA is estimated to have a probability of occurrence of 1E-05, and the probability of a SGTR is estimated to occur with a probability of 3.5E-05.

The scenarios with the most severe consequences are the least likely to occur. All of the accidents considered are of low probability during the CRAVS or ABFVES repair period. Based on the low probability of an event occurring in the 24-hour time period, the proposed new conditions are considered acceptable.

Conclusion

The proposed changes to Catawba TS 3.7.10 and 3.7.12 which permit the intermittent opening of the pressure boundary have been determined to be consistent with changes recently approved by the NRC for McGuire TS 3.7.9, CRAVS. These NRC approvals were for McGuire emergency and exigent LARs - see Duke letters dated June 10, 1999 (Reference 1) and September 13, 1999 (Reference 3), and NRC letters/safety evaluations dated June 11, 1999 (Reference 2) and September 22, 1999 (Reference 4). The proposed changes also implement these notes consistent with TSTF-287, Rev, 5 (Reference 5). Duke is pursuing the changes contained in this LAR in a proactive manner in order to fully implement TSTF 287, Rev. 5 at both McGuire and Catawba in order to avoid the possible need for future emergency/exigent licensing actions.

For both Catawba TS 3.7.10 and 3.7.12, the proposed changes also add a new Condition B. These new conditions allow 24 hours (during Modes 1, 2, 3, or 4) to restore the capability to maintain the applicable ventilation pressure boundary before requiring an orderly shutdown. As discussed above, the new conditions being proposed for TS 3.7.10 and 3.7.12 are considered acceptable because of the low probability of an event requiring an intact pressure boundary occurring during the 24-hour action completion time associated with the proposed new conditions.

Attachment 4

No Significant Hazards Consideration

In accordance with the criteria set forth in 10CFR50.91 and 50.92, Duke Energy Corporation has evaluated this license amendment request and determined it does not represent a significant hazards consideration. The following is provided in support of this conclusion.

1. Does the change involve a significant increase in the probability or consequences of an accident previously evaluated?

No. The Control Room Area Ventilation System (CRAVS), Control Room pressure boundary, the Auxiliary Building Filtered Ventilation Exhaust System (ABFVES), or the Emergency Core Cooling System (ECCS) pump rooms area pressure boundary are not assumed to be initiators of any analyzed accident. Therefore, the proposed changes contained in this LAR have no significant impact on the probability of occurrence of any previously analyzed accident.

The proposed new condition for the CRAVS and ABFVES Technical Specifications (TS) would permit a 24-hour period to take action to restore an inoperable pressure boundary to OPERABLE status. The consequences of implementing the 24 hour Completion Time are reasonable based upon: 1) the low probability of a design basis accident occurring during this time period, 2) additional actions that are available to the operator to minimize doses (e.g., self contained breathing apparatus and alternate control room air intakes), and 3) the availability of an operable CRAVS/ABFVES train to provide a filtered environment (albeit with potential unfiltered leakage).

For cases where any of the affected control room or ECCS pump room area/pump rooms pressure boundaries are opened intermittently under administrative controls, appropriate compensatory measures would be required by the proposed TS to ensure the pressure boundary can be rapidly restored. Based on the compensatory measures available to the plant operators and the administrative controls required to rapidly restore an opened pressure boundary, the accident consequences do not cause an increase in dose above the applicable General Design Criteria, Standard Review Plan, or 10CFR100 limits. The plant

operators will continue to maintain the ability to mitigate a design basis event.

2. Does the change create the possibility of a new or different kind of accident from any accident previously evaluated?

No. No changes are being made to actual plant hardware which will result in any new accident causal mechanisms. Also, no changes are being made to the way in which the plant is being operated. Therefore, no new accident causal mechanisms will be generated.

3. Does this change involve a significant reduction in a margin of safety?

No. Margin of safety is related to the ability of the fission product barriers to perform their design functions during and following accident conditions. These barriers include the fuel cladding, the reactor coolant system, and the containment system. The performance of these barriers will not be significantly degraded by the proposed changes. The proposed changes would allow affected pressure boundaries to be degraded for a limited period of time (24 hours). However, the probability of a design basis event occurring during this time is low and additional actions (e.g., breathing apparatus) would also be taken to minimize dose to the plant operators. When the boundaries are open on an intermittent basis, as permitted by the changes proposed in this LAR, administrative controls would be in place to ensure that the integrity of the pressure boundaries could be rapidly restored. Therefore, it is expected that the plant, and the operators, would maintain the ability to mitigate design basis events and none of the fission product barriers would be affected by this change. Therefore, the proposed change is not considered to result in a significant reduction in a margin of safety.

Attachment 5

Environmental Assessment/Impact Statement

This license amendment request (LAR) proposes changes to the Catawba Technical Specifications for the Control Room Area Ventilation System and the Auxiliary Building Filtered Ventilation Exhaust Systems. The proposed changes contained in this LAR address requirements for the pressure boundaries of these two systems at Catawba. The proposed changes contained in this LAR have been determined to be acceptable based upon risk-informed calculations and the addition of administrative controls. As such, this LAR has been reviewed against the criteria of 10CFR51.22 for environmental considerations. This LAR does not involve a significant hazards consideration (as determined in Attachment 4), nor increase the types and amounts of effluents that may be released offsite, nor increase individual or cumulative occupational radiation exposures. Therefore, this LAR meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for performing an Environmental Assessment/Impact Statement.

Attachment 6

References

1. Letter, H. B. Barron (Duke) to U. S. NRC Document Control Desk, "Proposed Technical Specification (TS) Amendment TS 3.7.9 - Control Room Area Ventilation System," dated June 10, 1999

2. Letter, F. Rinaldi (NRC) to H. B. Barron (Duke), "Emergency Technical Specifications Change Re: McGuire Nuclear Station, Units 1 and 2 (TAC Nos. MA5671 and MA5672)," dated June 11, 1999.

3. Letter, H. B. Barron (Duke) to U. S. NRC Document Control Desk, "Proposed Technical Specification Amendment, Technical Specification 3.7.9 - Control Room Area Ventilation System (CRAVS)," dated September 13, 1999

4. Letter, F. Rinaldi (NRC) to H. B. Barron (Duke), "McGuire Nuclear Station, Units 1 and 2 Re: Issuance of Amendments (TAC Nos. MA6428 and MA6429)," dated September 22, 1999

5. Industry/TSTF Standard Technical Specification Change Traveler TSTF-287, Rev. 5