Duke Power
A Duke Energy Company

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November 20, 2003

U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Document Control Desk

Subject: Oconee Nuclear Station
Docket Numbers 50-269, 270, and 287
Supplement to License Amendment Request for Full-Scope Implementation of the Alternate Source Term
Technical Specification Change (TSC) Number 2001-07

On October 16, 2001, Duke Energy (Duke) submitted the license amendment request (LAR) for full-scope implementation of the Alternate Source Term (AST). This LAR requested approval of the AST analysis methodology for Oconee Nuclear Station (ONS) that will support simplification of Ventilation System testing requirements during core alterations or movement of irradiated fuel. Duke received additional questions from the NRC related to the AST LAR. Supplements to the LAR were submitted on May 20, 2002, September 12, 2002, November 21, 2002, January 27, 2003, and September 22, 2003.

In the original submittal, Penetration Room Ventilation System (PRVS) and Spent Fuel Pool Ventilation System (SFPVS) were removed from the Technical Specifications (TS). After additional conversations with the NRC, Duke committed to maintaining these TS and supplemented the submittal on September 22, 2003. The requirements of these TS were relaxed as a result of AST. Duke also adopted TSTF-51 and the language associated with recently irradiated fuel to support the dose analysis assumption with respect to movement of irradiated fuel.

A001

As a result of a conference call with the NRC on November 17, 2003, Duke will remove PRVS from the TS and will adopt TSTF-51 for SFPVS with the exception of the surveillance requirement to run the SFPVS trains.

Attachment 1 contains a re-typed copy of the TS. Attachment 2 contains the marked-up copies of the TS. Attachment 3 contains justification for the changes requested. Attachment 4 contains the revised no significant hazards consideration.

Duke has committed to the following three modifications as a part of the AST LAR: a dual air intake system to the Control Room; a reroute of LDST and LPI leakage to the RBES; and a passive caustic addition system. These modifications will be completed on all three units by the end of 2005.

Pursuant to 10 CFR 50.91, a copy of this proposed license amendment is being sent to the State of South Carolina.

If there are any questions regarding this submittal, please contact Reene' Gambrell at (864) 885-3364.

Very truly yours,

R. A. Jones, Vice President
Oconee Nuclear Site

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R. A. Jones, being duly sworn, states that he is Vice President, Oconee Nuclear Site, Duke Energy Corporation, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this revision to the Renewed Facility Operating License Nos. DPR-38, DPR-47, DPR-55; and that all the statements and matters set forth herein are true and correct to the best of his knowledge.

R. A. Jones, Vice President
Oconee Nuclear Site

Subscribed and sworn to before me this 20th day of November 2003

Notary Public

My Commission Expires:

6/12/2013

ATTACHMENT 1
Duke Energy Corporation
Retype of Technical Specifications

REMOVE PAGE	INSERT PAGE
TS TOC iii	TS TOC iii
3.3.6-1	3.3.6-1
3.7.10-1	3.7.10-1
3.7.10-2	-----------
3.7.17-1	3.7.17-1
3.7.17-2	3.7.17-2
5.0-8	5.0-8
5.0-20	5.0-20
5.0-21	5.0-21
TSB TOC iv	TSB TOC iv
B 3.3.5-1	B 3.3.5-1
B 3.3.5-2	B 3.3.5-2
B 3.3.5-6	B 3.3.5-6
B 3.3.6-2	B 3.3.6-2
B 3.3.7-2	B 3.3.7-2
B 3.7.10-1	B 3.7.10-1
B 3.7.10-2	-----------
B 3.7.10-3	-----------
B 3.7.10-4	-----------
B 3.7.17-1	B 3.7.17-1
B 3.7.17-2	B 3.7.17-2
B 3.7.17-3	B 3.7.17-3

3.3 INSTRUMENTATION

3.3.6 Engineered Safeguards Protective System (ESPS) Manual Initiation

LCO 3.3.6 Two manual initiation channels of each one of the ESPS Functions below shall be OPERABLE:

a. High Pressure Injection, Reactor Building (RB) Non-Essential Isolation, Keowee Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input (ES Channels 1 and 2);

b. Low Pressure Injection (ES Channels 3 and 4);

c. RB Cooling and RB Essential Isolation (ES Channels 5 and 6); and

d. RB Spray (ES Channels 7 and 8).

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 when associated engineered safeguard equipment is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESPS Functions with one channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours

(continued)

3.7 PLANT SYSTEMS

3.7.10 Not Used

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Pool Ventilation System (SFPVS)

LCO 3.7.17 Two SFPVS trains shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies in the spent fuel pool.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFPVS train inoperable.	A.1 Place OPERABLE SFPVS train in operation. <u>OR</u> A.2 Suspend movement of recently irradiated fuel assemblies in the spent fuel pool.	Immediately Immediately
B. Two SFPVS trains inoperable.	B.1 Suspend movement of recently irradiated fuel assemblies in the spent fuel pool.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Operate each SFPVS train for $\geq$ 15 minutes.	31 days prior to movement of recently irradiated fuel assemblies
SR 3.7.17.2	Perform required SFPVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

5.5 Programs and Manuals

5.5.2 Containment Leakage Rate Testing Program (continued)

This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. Containment system visual examinations required by Regulatory Guide 1.163, Regulatory Position C.3 shall be performed as follows:

1. Accessible concrete surfaces and post-tensioning system component surfaces of the concrete containment shall be visually examined prior to initiating SR 3.6.1.1 Type A test. These visual examinations, or any portion thereof, shall be performed no earlier than 90 days prior to the start of refueling outages in which Type A tests will be performed. The validity of these visual examinations will be evaluated should any event or condition capable of affecting the integrity of the containment system occur between the completion of the visual examinations and the Type A test.

2. Accessible interior and exterior surfaces of metallic pressure retaining components of the containment system shall be visually examined at least three times every ten years, including during each shutdown for SR 3.6.1.1 Type A test, prior to initiating the Type A test.

Type B and C testing shall be implemented in the program in accordance with the requirements of 10 CFR 50, Appendix J, Option A.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 59 psig.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.20% of the containment air weight per day.

Leakage rate acceptance criterion is:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60\ L_a$ for the Type B and Type C tests, and $\leq 0.75\ L_a$ for Type A tests;

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5 Programs and Manuals (continued)

5.5.11 Secondary Water Chemistry

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.12 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of filter ventilation systems. CRVS testing will be conducted at the frequencies specified in Regulatory Guide 1.52, Revision 2.

The VFTP is applicable to the Control Room Ventilation System (CRVS) Booster Fan Trains and the Spent Fuel Pool Ventilation System (SFPVS).

a. Demonstrate, for the CRVS Booster Fan Trains, that a DOP test of the HEPA filters shows ≥ 99.5% removal when tested at in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

b. Demonstrate, for the CRVS Booster Fan Trains, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested at in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

5.5 Programs and Manuals

5.5.12 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate, for the CRVS Booster Fan Trains and SFPVS, that a laboratory test of a sample of the carbon adsorber shows ≥ 97.5% and 90% radioactive methyl iodide removal when tested in accordance with ASTM D3803-1989 (30°C, 95% RH), respectively.

d. Demonstrate, for the CRVS Booster Fan Trains, that the pressure drop across the pre-filter is ≤ 1 in. of water and the pressure drop across the HEPA filters is ≤ 2 in. of water at the system design flow rate ± 10%.

e. Demonstrate, for the SFPVS, that a dioctyl phthalate (DOP) test of the high efficiency particulate air (HEPA) filters shows ≥ 90% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 20%.

f. Demonstrate, for the SFPVS, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 90% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 20%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.13 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup tanks and the quantity of radioactivity contained in waste gas holdup tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined. The liquid radwaste quantities shall be determined by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

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B 3.3 INSTRUMENTATION

B 3.3.5 Engineered Safeguards Protective System (ESPS) Analog Instrumentation

BASES

BACKGROUND

The ESPS initiates necessary safety systems, based on the values of selected unit Parameters, to protect against violating core design limits and to mitigate accidents.

ESPS actuates the following systems:

- X High pressure injection (HPI);
- X Low pressure injection (LPI);
- X Reactor building (RB) cooling;
- X RB Spray;
- X RB Isoiation; and
- X Keowee Hydro Unit Emergency Start.

The ESPS operates in a distributed manner to initiate the appropriate systems. The ESPS does this by determining the need for actuation in each of three analog channels monitoring each actuation Parameter. Once the need for actuation is determined, the condition is transmitted to digital automatic actuation logic channels, which perform the two-out-of-three logic to determine the actuation of each end device. Each end device has its own automatic actuation logic, although all digital automatic actuation logic channels take their signals from the same bistable in each channel for each Parameter.

Four Parameters are used for actuation:

- X Low Reactor Coolant System (RCS) Pressure;
- X Low Low RCS Pressure;
- X High RB Pressure; and
- X High High RB Pressure.

BASES

BACKGROUND (continued)

LCO 3.3.5 covers only the analog instrumentation channels that measure these Parameters. These channels include all intervening equipment necessary to produce actuation before the measured process Parameter exceeds the limits assumed by the accident analysis. This includes sensors, bistable devices, operational bypass circuitry, and output relays. LCO 3.3.6, "Engineered Safeguards Protective System (ESPS) Manual Initiation," and LCO 3.3.7, "Engineered Safeguards Protective System (ESPS) Digital Automatic Actuation Logic Channels," provide requirements on the manual initiation and digital automatic actuation logic Functions.

The ESPS contains three analog channels. Each analog channel provides input to digital logic channels that initiate equipment with a two-out-of-three logic on each digital logic channel. Each analog channel includes inputs from one analog instrumentation channel of Low RCS Pressure, Low Low RCS Pressure, High RB Pressure, and High High RB Pressure. Digital automatic actuation logic channels combine the three analog channel trips to actuate the individual Engineered Safeguards (ES) components needed to initiate each ES System. Figure 7.5, UFSAR, Chapter 7 (Ref. 1), illustrates how analog instrumentation channel trips combine to cause digital logic channel trips.

The following matrix identifies the analog instrumentation (measurement) channels and the Digital Automatic Actuation Logic Channels actuated by each.

Digital Logic Channels	Actuated Systems/ Functions	RCS PRESS LOW	RCS PRESS LOW LOW	RB PRESS HIGH	RB PRESS HIGH HIGH
1 and 2	HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	X		X	
3 and 4	LPI and RB Essential isolation		X	X	
5 and 6	RB Cooling and RB Essential isolation.			X	
7 and 8	RB Spray				X

The ES equipment is generally divided between the two redundant digital actuation logic channels. The division of the equipment between the two digital actuation logic channels is based on the equipment redundancy and

BASES

APPLICABLE SAFETY ANALYSES (continued)

Reactor Building Spray, Reactor Building Cooling, and Reactor Building Isolation

The ESPS actuation of the RB coolers and RB Spray have been credited in RB analysis for LOCAs, both for RB performance and equipment environmental qualification pressure and temperature envelope definition. Accident dose calculations have credited RB Isolation and RB Spray.

Keowee Hydro Unit Emergency Start

The ESPS initiated Keowee Hydro Unit Emergency Start has been included in the design to ensure that emergency power is available throughout the limiting LOCA scenarios.

The small break LOCA analyses assume a conservative 48 second delay time for the actuation of HPI and LPI in UFSAR, Chapter 15 (Ref. 4). The large break LOCA analyses assume LPI flow starts in 38 seconds while full LPI flow does not occur until 15 seconds later, or 53 seconds total (Ref. 4). This delay time includes allowances for Keowee Hydro Unit starting, Emergency Core Cooling Systems (ECCS) pump starts, and valve openings. Similarly, the RB Cooling, RB Isolation, and RB Spray have been analyzed with delays appropriate for the entire system analyzed.

Accident analyses rely on automatic ESPS actuation for protection of the core temperature and containment pressure limits and for limiting off site dose levels following an accident. These include LOCA, and MSLB events that result in RCS inventory reduction or severe loss of RCS cooling.

The ESPS channels satisfy Criterion 3 of 10 CFR 50.36 (Ref. 5).

LCO

The LCO requires three analog channels of ESPS instrumentation for each Parameter in Table 3.3.5–1 to be OPERABLE in each ESPS digital automatic actuation logic channel. Failure of any instrument renders the affected analog channel(s) inoperable and reduces the reliability of the affected Functions.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The ESPS manual initiation ensures that the control room operator can rapidly initiate ES Functions. The manual initiation trip Function is required as a backup to automatic trip functions and allows operators to initiate ESPS whenever any parameter is rapidly trending toward its trip setpoint.

The ESPS manual initiation functions satisfy Criterion 3 of 10 CFR 50.36 (Ref. 1).

LCO

Two ESPS manual initiation channels of each ESPS Function shall be OPERABLE whenever conditions exist that could require ES protection of the reactor or RB. Two OPERABLE channels ensure that no single random failure will prevent system level manual initiation of any ESPS Function. The ESPS manual initiation Function allows the operator to initiate protective action prior to automatic initiation or in the event the automatic initiation does not occur.

The required Function is provided by two associated channels as indicated in the following table:

Function	Associated Channels
HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	1 & 2
LPI	3 & 4
RB Cooling and RB Essential isolation	5 & 6
RB Spray	7 & 8

APPLICABILITY

The ESPS manual initiation Functions shall be OPERABLE in MODES 1 and 2, and in MODES 3 and 4 when the associated engineered safeguard equipment is required to be OPERABLE. The manual initiation channels are required because ES Functions are designed to provide protection in these MODES. ESPS initiates systems that are either reconfigured for decay heat removal operation or disabled while in MODES 5 and 6. Accidents in these MODES are slow to develop and would be mitigated by manual operation of individual components. Adequate time is available to evaluate unit conditions and to respond by manually operating the ES components, if required.

BASES

BACKGROUND (continued)

Hydro Unit startup and loading, ECCS pump starts, and valve openings. Similarly, the reactor building (RB) Cooling, RB Isolation, and RB Spray have been analyzed with delays appropriate for the entire system.

The ESPS automatic initiation of Engineered Safeguards (ES) Functions to mitigate accident conditions is assumed in the accident analysis and is required to ensure that consequences of analyzed events do not exceed the accident analysis predictions. Automatically actuated features include HPI, LPI, RB Cooling, RB Spray, and RB Isolation.

APPLICABLE SAFETY ANALYSES

Accident analyses rely on automatic ESPS actuation for protection of the core and RB and for limiting off site dose levels following an accident. The digital automatic actuation logic is an integral part of the ESPS.

The ESPS digital automatic actuation logic channels satisfy Criterion 3 of 10 CFR 50.36 (Ref. 3).

LCO

The digital automatic actuation logic channels are required to be OPERABLE whenever conditions exist that could require ES protection of the reactor or the RB. This ensures automatic initiation of the ES required to mitigate the consequences of accidents.

The required Function is provided by two associated digital channels as indicated in the following table:

Function	Associated Channels
HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	1 & 2
LPI and RB Essential isolation	3 & 4
RB Cooling and RB Essential isolation	5 & 6
RB Spray	7 & 8

B 3.7 PLANT SYSTEMS

B 3.7.10 Not Used

B 3.7 PLANT SYSTEMS

B 3.7.17 Spent Fuel Pool Ventilation System (SFPVS)

BASES

BACKGROUND

Ventilation air for the Spent Fuel Pool Area is supplied by an air handling unit which consists of roughing filters, steam heating coil, cooling coil supplied by low pressure service water, and a centrifugal fan. In the normal mode of operation, the air from the Spent Fuel Pool Area is exhausted directly to the unit vents by the general Auxiliary Building exhaust fans. The filtered exhaust system consists of a single filter train and two 100 percent capacity vane axial fans. The filter train utilized is the Reactor Building Purge Filter Train. The Unit 2 Reactor Building purge filter train is used for the combined Unit 1 and 2 Spent Fuel Pool Ventilation System, The Unit 3 Reactor Building purge filter train is used for the Unit 3 SFP Ventilation System. The filter train is comprised of prefilters, HEPA filters, and charcoal filters. To control the direction of air flow, i.e., to direct the air from the Fuel Pool Area to the Reactor Building Purge Filter Train, a series of pneumatic motor operated dampers are provided along with a crossover duct from the Fuel Pool to the filter train.

The SFPVS is discussed in the UFSAR, Section 9.4.2, (Ref. 1).

APPLICABLE SAFETY ANALYSES

The analysis of the limiting fuel handling accident, the cask drop accident, given in Reference 2, assumes that a certain number of fuel assemblies are damaged. The DBA analysis for the cask drop accident, does not assume operation of the SFPVS in order to meet the requirements of 10 CFR 50.67 (Ref. 4). These assumptions and the analysis are consistent with the guidance provided in Regulatory Guide 1.183 (Ref. 3).

The SFPVS does not satisfy the criteria in 10 CFR 50.36. The SFPVS is retained in this specification for ALARA purposes.

LCO

With the adoption of the alternate source term and the installation of various plant modifications, SFPVS is not credited in dose analysis calculations. Therefore, there are no specific operability requirements for this system.

BASES

LCO (continued)

An SFPVS train is considered OPERABLE when its associated:

1. Fan is OPERABLE;
2. Filter trains are intact; and
3. Ductwork and dampers are OPERABLE, and air flow can be maintained.

APPLICABILITY

During movement of recently irradiated fuel assemblies in the fuel handling area, the SFPVS shall be OPERABLE.

ACTIONS

<u>A.1 and A.2</u>

With one SFPVS train inoperable, the OPERABLE SFPVS train must be started immediately with its discharge through the associated reactor building purge filter or recently irradiated fuel movement in the spent fuel pool suspended. This action ensures that the remaining train is OPERABLE, and that any active failures will be readily detected.

If the system is not placed in operation, this action requires suspension of recently irradiated fuel movement, which precludes a fuel handling accident. This action does not preclude the movement of recently irradiated fuel assemblies to a safe position.

BASES

ACTIONS (continued)

B.1

When two trains of the SFPVS are inoperable during movement of recently irradiated fuel in the spent fuel pool, the unit must be placed in a condition in which the LCO does not apply. This Action involves immediately suspending movement of recently irradiated fuel assemblies in the spent fuel pool. This does not preclude the movement of recently irradiated fuel to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

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 31 days prior to moving recently irradiated fuel assemblies provides an adequate check on this system. The system is no longer credited in dose analysis calculations and is not required to maintain 10 CFR 50.67 dose limits, but is required for ALARA purposes.

SR 3.7.17.2

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

REFERENCES

1. UFSAR, Section 9.4.2.
2. UFSAR, Section 15.11.
3. Regulatory Guide 1.183.
4. 10 CFR 50.67.
5. Dose Calculations.

ATTACHMENT 2

Duke Energy Corporation
Mark-up of Technical Specifications

3.3 INSTRUMENTATION

3.3.6 Engineered Safeguards Protective System (ESPS) Manual Initiation

LCO 3.3.6 Two manual initiation channels of each one of the ESPS Functions below shall be OPERABLE:

a. High Pressure Injection, Reactor Building (RB) Non-Essential Isolation, Keowee Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input (ES Channels 1 and 2);

b. ~~Low Pressure~~ Injection (ES Channels 3 and 4);

and

c. RB Cooling, RB Essential Isolation ~~and Penetration Room Ventilation~~ (ES Channels 5 and 6); and

d. ~~RB Spray (ES Channels 7 and 8).~~

APPLICABILITY: MODES 1 and 2,
MODES 3 and 4 when associated engineered safeguard equipment is required to be OPERABLE.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each Function.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One or more ESPS Functions with one channel inoperable.	A.1 Restore channel to OPERABLE status.	72 hours

(continued)

3.7 PLANT SYSTEMS

3.7.10 ~~Penetration Room Ventilation System (PRVS)~~ Not Used

LCO 3.7.10 Two PRVS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One PRVS train inoperable.	A.1 Restore PRVS train to OPERABLE status.	7 days
B. Required Action and associated Completion Time not met.	B.1 Be in MODE 3. AND B.2 Be in MODE 5.	12 hours 36 hours

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each PRVS train for ≥ 15 minutes.	31 days
SR 3.7.10.2	Perform required PRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

(continued)

DELETE

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.10.3	Verify each PRVS train actuates on an actual or simulated actuation signal.	18 months
SR 3.7.10.4	Verify one PRVS train can maintain a negative pressure ≥ 0.06 inches water gauge relative to atmospheric pressure during operation at a flow rate of ≥ 900 cfm and ≤ 1100 cfm.	18 months on a STAGGERED TEST BASIS
SR 3.7.10.5	Verify the PRVS filter cooling bypass valve can be opened.	18 months

3.7 PLANT SYSTEMS

3.7.17 Spent Fuel Pool Ventilation System (SFPVS)

LCO 3.7.17 Two SFPVS trains shall be OPERABLE.

---NOTES---

1. LCO 3.0.3 is not applicable.

2. Not applicable during reracking operations with no fuel in the spent fuel pool.

APPLICABILITY: During movement of recently irradiated fuel assemblies in the spent fuel pool.
~~During crane operations with loads over the spent fuel pool.~~

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One SFPVS train inoperable.	A.1 Place OPERABLE SFPVS train in operation.	Immediately
	OR	
	A.2~~.1~~ Suspend movement of recently irradiated fuel assemblies in the spent fuel pool	Immediately
	~~AND~~	
	~~A.2.2 Suspend crane operations with loads over the spent fuel pool.~~	~~Immediately~~

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
B. Two SFPVS trains inoperable.	B.1.1 Suspend movement of recently irradiated fuel assemblies in the spent fuel pool. ~~AND~~ ~~B.1.2 Suspend crane operations with loads over the spent fuel pool.~~	Immediately ~~Immediately~~

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.17.1	Operate each SFPVS train for ≥ 15 minutes.	31 days prior to movement of recently irradiated fuel assemblies AND ~~≥ 6 months~~ ~~31 days~~
SR 3.7.17.2	Perform required SFPVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP

5.5 Programs and Manuals

5.5.2 Containment Leakage Rate Testing Program (continued)

This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program," dated September 1995. Containment system visual examinations required by Regulatory Guide 1.163, Regulatory Position C.3 shall be performed as follows:

1. Accessible concrete surfaces and post-tensioning system component surfaces of the concrete containment shall be visually examined prior to initiating SR 3.6.1.1 Type A test. These visual examinations, or any portion thereof, shall be performed no earlier than 90 days prior to the start of refueling outages in which Type A tests will be performed. The validity of these visual examinations will be evaluated should any event or condition capable of affecting the integrity of the containment system occur between the completion of the visual examinations and the Type A test.

2. Accessible interior and exterior surfaces of metallic pressure retaining components of the containment system shall be visually examined at least three times every ten years, including during each shutdown for SR 3.6.1.1 Type A test, prior to initiating the Type A test.

Type B and C testing shall be implemented in the program in accordance with the requirements of 10 CFR 50, Appendix J, Option A.

The peak calculated containment internal pressure for the design basis loss of coolant accident, P_a, is 59 psig.

The maximum allowable containment leakage rate, L_a, at P_a, shall be 0.~~25~~ .20% of the containment air weight per day.

Leakage rate acceptance ~~criteria are~~ criterion is:

a. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$. During the first unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60\ L_a$ for the Type B and Type C tests, and $\leq 0.75\ L_a$ for Type A tests;

~~b. Leakage > 0.50 L_a shall be to the penetration room.~~

The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5 Programs and Manuals (continued)

5.5.11 Secondary Water Chemistry

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.12 Ventilation Filter ~~Testing Program (VFTP)~~

A program shall be established to implement the following required testing of filter ventilation systems at the frequencies specified in Regulatory Guide 1.52, Revision 2. CRVS testing will be conducted

The VFTP is applicable to the ~~Penetration Room Ventilation System (PRVS), the~~ Control Room Ventilation System (CRVS) Booster Fan Trains, and the Spent Fuel Pool Ventilation System (SFPVS).

~~a. Demonstrate, for the PRVS, that a dioctyl phthalate (DOP) test of the high efficiency particulate air (HEPA) filters shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.~~

a. ~~b.~~ Demonstrate, for the CRVS Booster Fan Trains, that a DOP test of the HEPA filters shows ≥ 99.5% removal when tested at in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

~~c. Demonstrate, for the PRVS, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.~~

5.5 Programs and Manuals

5.5.12 Ventilation Filter Testing Program (VFTP) (continued)

d. Demonstrate, for the CRVS Booster Fan Trains, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested at in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

e. Demonstrate, for the CRVS Booster Fan Trains, PRVS and SFPVS, that a laboratory test of a sample of the carbon adsorber shows ≥ 99%, 90%, 90% radioactive methyl iodide removal when tested in accordance with ASTM D3803-1989 (30°C, 95% RH).

~~f. Demonstrate, for the PRVS, that the pressure drop across the combined HEPA filters and carbon adsorber banks is < 6 in. of water at the system design flow rate ± 10%.~~

g. Demonstrate, for the CRVS Booster Fan Trains, that the pressure drop across the pre-filter is ≤ 1 in. of water and the pressure drop across the HEPA filters is ≤ 2 in. of water at the system design flow rate ± 10%.

h. Demonstrate, for the SFPVS, that a dioctyl phthalate (DOP) test of the high efficiency particulate air (HEPA) filters shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

i. Demonstrate, for the SFPVS, that a halogenated hydrocarbon test of the carbon adsorber shows ≥ 99% removal when tested in accordance with ANSI N510-1975 at the system design flow rate ± 10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.13 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the waste gas holdup tanks and the quantity of radioactivity contained in waste gas holdup tanks, and the quantity of radioactivity contained in unprotected outdoor liquid storage tanks. The gaseous radioactivity quantities shall be determined. The liquid radwaste quantities shall be determined by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

B 3.3 INSTRUMENTATION

B 3.3.5 Engineered Safeguards Protective System (ESPS) Analog Instrumentation

BASES

BACKGROUND

The ESPS initiates necessary safety systems, based on the values of selected unit Parameters, to protect against violating core design limits and to mitigate accidents.

ESPS actuates the following systems:

- High pressure injection (HPI);
- Low pressure injection (LPI);
- Reactor building (RB) cooling;
- ~~Penetration room ventilation;~~
- RB Spray;
- RB Isolation; and
- Keowee Hydro Unit Emergency Start.

The ESPS operates in a distributed manner to initiate the appropriate systems. The ESPS does this by determining the need for actuation in each of three analog channels monitoring each actuation Parameter. Once the need for actuation is determined, the condition is transmitted to digital automatic actuation logic channels, which perform the two-out-of-three logic to determine the actuation of each end device. Each end device has its own automatic actuation logic, although all digital automatic actuation logic channels take their signals from the same bistable in each channel for each Parameter.

Four Parameters are used for actuation:

- Low Reactor Coolant System (RCS) Pressure;
- Low Low RCS Pressure;
- High RB Pressure; and
- High High RB Pressure.

BASES

BACKGROUND (continued)

LCO 3.3.5 covers only the analog instrumentation channels that measure these Parameters. These channels include all intervening equipment necessary to produce actuation before the measured process Parameter exceeds the limits assumed by the accident analysis. This includes sensors, bistable devices, operational bypass circuitry, and output relays. LCO 3.3.6, "Engineered Safeguards Protective System (ESPS) Manual Initiation," and LCO 3.3.7, "Engineered Safeguards Protective System (ESPS) Digital Automatic Actuation Logic Channels," provide requirements on the manual initiation and digital automatic actuation logic Functions.

The ESPS contains three analog channels. Each analog channel provides input to digital logic channels that initiate equipment with a two-out-of-three logic on each digital logic channel. Each analog channel includes inputs from one analog instrumentation channel of Low RCS Pressure, Low Low RCS Pressure, High RB Pressure, and High High RB Pressure. Digital automatic actuation logic channels combine the three analog channel trips to actuate the individual Engineered Safeguards (ES) components needed to initiate each ES System. Figure 7.5, UFSAR, Chapter 7 (Ref. 1), illustrates how analog instrumentation channel trips combine to cause digital logic channel trips.

The following matrix identifies the analog instrumentation (measurement) channels and the Digital Automatic Actuation Logic Channels actuated by each.

Digital Logic Channels	Actuated Systems/ Functions	RCS PRESS LOW	RCS PRESS LOW LOW	RB PRESS HIGH	RB PRESS HIGH HIGH
1 and 2	HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	X		X	
3 and 4	LPI and RB Essential isolation		X	X	
5 and 6	RB Cooling and RB Essential isolation ~~and Penetration Room Vent~~			X	
7 and 8	RB Spray				X

The ES equipment is generally divided between the two redundant digital actuation logic channels. The division of the equipment between the two digital actuation logic channels is based on the equipment redundancy and

BASES

APPLICABLE SAFETY ANALYSES (continued)

Reactor Building Spray, Reactor Building Cooling, and Reactor Building Isolation

The ESPS actuation of the RB coolers and RB Spray have been credited in RB analysis for LOCAs, both for RB performance and equipment environmental qualification pressure and temperature envelope definition. Accident dose calculations have credited RB Isolation and RB Spray.

~~Penetration Room Ventilation Actuation~~

~~The ESPS actuation of the penetration room ventilation system has been assumed for LOCAs. Accident dose calculations have credited penetration room ventilation.~~

Keowee Hydro Unit Emergency Start

The ESPS initiated Keowee Hydro Unit Emergency Start has been included in the design to ensure that emergency power is available throughout the limiting LOCA scenarios.

The small break LOCA analyses assume a conservative 48 second delay time for the actuation of HPI and LPI in UFSAR, Chapter 15 (Ref. 4). The large break LOCA analyses assume LPI flow starts in 38 seconds while full LPI flow does not occur until 15 seconds later, or 53 seconds total (Ref. 4). This delay time includes allowances for Keowee Hydro Unit starting, Emergency Core Cooling Systems (ECCS) pump starts, and valve openings. Similarly, the RB Cooling, RB Isolation, and RB Spray have been analyzed with delays appropriate for the entire system analyzed.

Accident analyses rely on automatic ESPS actuation for protection of the core temperature and containment pressure limits and for limiting off site dose levels following an accident. These include LOCA, and MSLB events that result in RCS inventory reduction or severe loss of RCS cooling.

The ESPS channels satisfy Criterion 3 of 10 CFR 50.36 (Ref. 5).

LCO

The LCO requires three analog channels of ESPS instrumentation for each Parameter in Table 3.3.5–1 to be OPERABLE in each ESPS digital automatic actuation logic channel. Failure of any instrument renders the affected analog channel(s) inoperable and reduces the reliability of the affected Functions.

BASES

APPLICABLE SAFETY ANALYSES (continued)

The ESPS manual initiation ensures that the control room operator can rapidly initiate ES Functions. The manual initiation trip Function is required as a backup to automatic trip functions and allows operators to initiate ESPS whenever any parameter is rapidly trending toward its trip setpoint.

The ESPS manual initiation functions satisfy Criterion 3 of 10 CFR 50.36 (Ref. 1).

LCO

Two ESPS manual initiation channels of each ESPS Function shall be OPERABLE whenever conditions exist that could require ES protection of the reactor or RB. Two OPERABLE channels ensure that no single random failure will prevent system level manual initiation of any ESPS Function. The ESPS manual initiation Function allows the operator to initiate protective action prior to automatic initiation or in the event the automatic initiation does not occur.

The required Function is provided by two associated channels as indicated in the following table:

Function	Associated Channels
HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee Standby Bus Feeder Breaker Input	1 & 2
LPI	3 & 4
RB Cooling and RB Essential isolation, ~~and Penetration Room Vent.~~	5 & 6
RB Spray	7 & 8

APPLICABILITY

The ESPS manual initiation Functions shall be OPERABLE in MODES 1 and 2, and in MODES 3 and 4 when the associated engineered safeguard equipment is required to be OPERABLE. The manual initiation channels are required because ES Functions are designed to provide protection in these MODES. ESPS initiates systems that are either reconfigured for decay heat removal operation or disabled while in MODES 5 and 6. Accidents in these MODES are slow to develop and would be mitigated by manual operation of individual components. Adequate time is available to evaluate unit conditions and to respond by manually operating the ES components, if required.

BASES

BACKGROUND (continued)

includes allowances for Keowee Hydro Unit startup and loading, ECCS pump starts, and valve openings. Similarly, the reactor building (RB) Cooling, RB Isolation, and RB Spray have been analyzed with delays appropriate for the entire system.

The ESPS automatic initiation of Engineered Safeguards (ES) Functions to mitigate accident conditions is assumed in the accident analysis and is required to ensure that consequences of analyzed events do not exceed the accident analysis predictions. Automatically actuated features include HPI, LPI, RB Cooling, RB Spray, and RB Isolation.

APPLICABLE SAFETY ANALYSES

Accident analyses rely on automatic ESPS actuation for protection of the core and RB and for limiting off site dose levels following an accident. The digital automatic actuation logic is an integral part of the ESPS.

The ESPS digital automatic actuation logic channels satisfy Criterion 3 of 10 CFR 50.36 (Ref. 3).

LCO

The digital automatic actuation logic channels are required to be OPERABLE whenever conditions exist that could require ES protection of the reactor or the RB. This ensures automatic initiation of the ES required to mitigate the consequences of accidents.

The required Function is provided by two associated digital channels as indicated in the following table:

Function	Associated Channels
HPI and RB Non-Essential Isolation, Keowee Emergency Start, Load Shed and Standby Breaker Input, and Keowee ~~Standby Bus Feeder Breaker~~ Input	1 & 2
LPI and RB Essential isolation	3 & 4
RB Cooling, and RB Essential isolation ~~and Penetration Room Vent.~~	5 & 6
RB Spray	7 & 8

B 3.7 PLANT SYSTEMS

B 3.7.10 ~~Penetration Room Ventilation System (PRVS)~~ Not Used

BASES

BACKGROUND

The PRVS filters air from the area of the active penetration rooms during the recirculation phase of a loss of coolant accident (LOCA).

The PRVS consists of two independent, redundant trains. Each train consists of a prefilter, a high efficiency particulate air (HEPA) filter, an activated carbon adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system. The system initiates filtered ventilation of the Reactor Building penetration rooms area following receipt of an Engineered Safeguards actuation signal (ESAS).

The PRVS is a standby system. During emergency operations, the PRVS valves are realigned, and fans are started to begin filtration. Upon receipt of the ESAS signal(s), the stream of ventilation air discharges through the system filter trains. The prefilters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and carbon adsorbers.

The PRVS is discussed in the UFSAR, Sections 6.5.1, 9.4.7, and 15.4.7 (Refs. 1, 2, and 3, respectively).

APPLICABLE SAFETY ANALYSES

The design basis of the PRVS is established by the Maximum Hypothetical Accident (MHA). In such a case, the system limits radioactive releases to within 10 CFR 100 (Ref. 7) requirements and personnel doses in the Control Room are maintained within the limits of 10 CFR 20 (Ref. 4). The analysis of the effects and consequences of an MHA is presented in Reference 3.

The PRVS also actuates following a large and small break LOCA, in those cases where the unit goes into the recirculation mode of long term cooling, and to cleanup releases of smaller leaks, such as from valve stem packing.

Following a LOCA, an ESAS starts the PRVS fans and opens the dampers located in the penetration room outlet ductwork.

The PRVS satisfies Criterion 3 of 10 CFR 50.36 (Ref. 5).

BASES (continued)

LCO

Two independent and redundant trains of the PRVS 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.

The PRVS is considered OPERABLE when the individual components necessary to maintain the penetration room filtration are OPERABLE in both trains.

A PRVS train is considered OPERABLE when its associated:

a. Fan is OPERABLE;

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

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

In addition, the penetration room boundaries, including the integrity of the walls, floors, ceilings, ductwork, and access doors, must be maintained within the assumptions of the design analysis.

APPLICABILITY

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

In MODES 5 and 6, the PRVS is not required to be OPERABLE since the containment is not required to be OPERABLE.

ACTIONS

A.1

With one PRVS train inoperable, action must be taken to restore the PRVS train to OPERABLE status within 7 days. During this time, the remaining OPERABLE train is adequate to perform the PRVS safety function. However, the overall reliability is reduced because a single failure in the OPERABLE PRVS train could result in loss of PRVS function.

The 7 day Completion Time is appropriate because the risk contribution is less than that of 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 an accident occurring during this time period, and ability of the remaining train to provide the required capability.

BASES

ACTIONS (continued)

B.1 and B.2

If the required Action and associated Completion Time are not met, 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 12 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.

SURVEILLANCE REQUIREMENTS

SR 3.7.10.1

Standby systems should be checked periodically to ensure that they function properly. Since 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. The 31 day Frequency is based on known reliability of equipment and the two train redundancy available.

SR 3.7.10.2

This SR verifies that the required PRVS testing is performed in accordance with the *Ventilation Filter Testing Program* (VFTP). The VFTP includes testing HEPA filter performance and carbon adsorber efficiency. Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.10.3

This SR verifies that each PRVS train starts and operates on an actual or simulated actuation signal. The 18 month Frequency is consistent with the guidance in Reference 6.

SR 3.7.10.4

This SR verifies the integrity of the penetration rooms area. The ability of the PRVS to maintain a negative pressure, with respect to outside atmosphere, is periodically tested to verify proper functioning of the PRVS. During the post accident mode of operation, the PRVS is

BASES

SURVEILLANCE REQUIREMENTS

SR 3.7.10.4 (continued)

designed to maintain a slight negative pressure in the penetration rooms with respect to outside atmosphere to prevent unfiltered LEAKAGE. The PRVS is designed to maintain this negative pressure at a flow rate of 1000 ± 10% cfm from the area. The Frequency of 18 months on a STAGGERED TEST BASIS is consistent with industry practice and other filtration SRs.

SR 3.7.10.5

Operating the PRVS filter bypass valve is necessary to ensure that the system functions properly. The OPERABILITY of the PRVS filter bypass valve is verified if it can be opened. An 18 month Frequency is consistent with the guidance in Reference 6.

REFERENCES

1. UFSAR, Section 6.5.1.
2. UFSAR, Section 9.4.7.
3. UFSAR, Section 15.15.
4. 10 CFR 20.
5. 10 CFR 50.36.
6. Regulatory Guide 1.52.
7. 10 CFR 100.

DELETE

B 3.7 PLANT SYSTEMS

B 3.7.17 Spent Fuel Pool Ventilation System (SFPVS)

BASES

BACKGROUND

Ventilation air for the Spent Fuel Pool Area is supplied by an air handling unit which consists of roughing filters, steam heating coil, cooling coil supplied by low pressure service water, and a centrifugal fan. In the normal mode of operation, the air from the Spent Fuel Pool Area is exhausted directly to the unit vents by the general Auxiliary Building exhaust fans. The filtered exhaust system consists of a single filter train and two 100 percent capacity vane axial fans. The filter train utilized is the Reactor Building Purge Filter Train. The Unit 2 Reactor Building purge filter train is used for the combined Unit 1 and 2 Spent Fuel Pool Ventilation System. The Unit 3 Reactor Building purge filter train is used for the Unit 3 SFP Ventilation System. The filter train is comprised of prefilters, HEPA filters, and charcoal filters. To control the direction of air flow, i.e., to direct the air from the Fuel Pool Area to the Reactor Building Purge Filter Train, a series of pneumatic motor operated dampers are provided along with a crossover duct from the Fuel Pool to the filter train.

The SFPVS is discussed in the UFSAR, Section 9.4.2, (Ref. 1).

APPLICABLE SAFETY ANALYSES

The analysis of the limiting fuel handling accident, the cask drop accident, given in Reference 2, assumes that a certain number of fuel assemblies are damaged. The DBA analysis for the cask drop accident, does not assume operation of the SFPVS in order to meet the requirements of 10CFR 50.67 (Ref. 4). These assumptions and the analysis are consistent with the guidance ~~provided in Regulatory~~ Guide 1.~~25~~ 183 (Ref. 3).

~~The SFPVS does not satisfy the criteria in 10 CFR 50.36~~
The SFPVS is retained in this Specification for ALARA purposes.

LCO

~~Two redundant trains of the SFPVS are required to be OPERABLE to ensure that at least one is available, assuming a single failure that disables the other train.~~

With the adoption of the alternate Source term and the installation of various plant modifications SFPVS is not credited in dose analysis calculations. Therefore, there are no specific operability requirements for this system.

BASES

LCO (continued)

An SFPVS train is considered OPERABLE when its associated:

1. Fan is OPERABLE;

2. ~~HEPA~~ Filter trains are intact; ~~and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions;~~ and

3. Ductwork and dampers are OPERABLE, and air flow can be maintained.

~~The LCO is modified by two Notes. Note 1 states LCO 3.0.3 does not apply. If moving fuel or conducting crane operations with load over the storage pool while in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving fuel or conducting crane operations with load over the storage pool while in MODE 1, 2, 3, or 4, the fuel movement is independent of reactor operation. Therefore, inability to suspend movement of fuel assemblies is not a sufficient reason to require a reactor shutdown. Note 2 states the requirements of this LCO is not applicable during reracking operations with no fuel in the spent fuel pool. With no fuel in the spent fuel pool, the potential release of radioactive material to the environs resulting from crane operations with load over the storage pool is substantially reduced.~~

APPLICABILITY

During movement of recently irradiated fuel assemblies in the fuel handling area ~~or during crane operations with loads over the spent fuel pool~~, the SFPVS ~~is always required to~~ shall be OPERABLE.

ACTIONS

A.1 and A.2

With one SFPVS train inoperable, the OPERABLE SFPVS train must be started immediately with its discharge through the associated reactor building purge filter or recently irradiated fuel movement in the spent fuel pool ~~and crane operations with loads over the spent fuel pool~~ suspended. This action ensures that the remaining train is OPERABLE, and that any active failures will be readily detected.

If the system is not placed in operation, this action requires suspension of recently irradiated fuel movement ~~and suspension of crane operation with loads over the spent fuel pool,~~ which precludes a fuel handling accident. This action does not preclude the movement of recently irradiated fuel assemblies ~~or crane loads~~ to a safe position.

BASES

ACTIONS (continued)

B.1

When two trains of the SFPVS are inoperable during movement of fuel in the spent fuel pool, the unit must be placed in a condition in which the LCO does not apply. This Action involves immediately suspending movement of fuel assemblies in the spent fuel pool, and suspension of crane operations with loads over the spent fuel pool. This does not preclude the movement of fuel or crane loads to a safe position.

SURVEILLANCE REQUIREMENTS

SR 3.7.17.1

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 31 days prior to moving recently irradiated fuel assemblies and once every six months provides an adequate check on this system. Systems without heaters need only be operated through the associated reactor building purge filters at a design flow ± 10% for ≥ 15 minutes to demonstrate the function of the system. The 31 day Frequency is based on the known reliability of the equipment and the two train redundancy. The system is no longer credited in dose analysis calculations and is not required to maintain 10 CFR 50.67 dose limits, but is required for ALARA purposes.

SR 3.7.17.2

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

REFERENCES

1. UFSAR, Section 9.4.2.
2. UFSAR, Section 15.11.
3. Regulatory Guide 1.25. 183
4. 10 CFR 50.67.
5. Dose Calculations.

ATTACHMENT 3
TECHNICAL JUSTIFICATION

ATTACHMENT 3
TECHNICAL JUSTIFICATION

BACKGROUND:

On October 16, 2001, the license amendment request (LAR) for approval of the Alternate Source Term (AST) analysis methodology for Oconee Nuclear Station (ONS) was submitted. This license amendment will support simplification of Ventilation System testing requirements during core alterations or movement of irradiated fuel. Duke Energy Corporation (Duke) received additional questions from the NRC related to the AST submittal. Responses to these questions were submitted on May 20, 2002, September 12, 2002, November 21, 2002, January 27, 2003, and September 22, 2003.

Penetration Room Ventilation System (PRVS) and Spent Fuel Pool Ventilation System (SFPVS) were removed from ONS Technical Specifications (TS) in the original submittal. In the submittal dated September 22, 2003, Duke committed to maintain relaxed requirements for PRVS and SFPVS in TS. After additional conversations with the NRC, Duke will remove PRVS from TS and maintain SFPVS in TS. Duke also intends to adopt TSTF-51 with respect to the SFPVS TS conditions, but relax certain surveillance requirement (SR) criteria associated with running the SFPVS trains.

JUSTIFICATION FOR REQUEST:

The submitted dose analysis does not credit removal of radiological contaminants by the PRVS subsequent to a Loss Of Coolant Accident (LOCA) or Fuel Handling Accident (FHA) inside containment, or by the SFPVS in the spent fuel pool building. Because the analysis no longer credit PRVS and SFPVS, they no longer meet the criterion for inclusion in TS as defined in 10 CFR 50.36. Duke will remove the PRVS from TS, but retain and relax certain surveillance requirements for SFPVS TS. Retaining the TS for SFPVS is for ALARA purposes.

In the submittal dated September 22, 2003, Duke had partially adopted TSTF-51 and the language associated with recently irradiated fuel assemblies for the SFPVS TS. TSTF-51 will be adopted fully with the exception of the relaxed SR. Justification for TSTF-51 can be referenced in that submittal.

Because the analysis no longer credit SFPVS, the SR can be relaxed as long as the fans are proven OPERABLE prior to moving recently irradiated fuel.

Description of Changes:

Technical Specification (TS) 3.3.6, Engineered Safeguards Protective System (ESPS) Manual Initiation

The ESPS initiates necessary safety systems, based on the values of selected unit parameters, to protect against violating core design limits and mitigate accidents. PRVS is one of the systems actuated by the ESPS. Since the PRVS will not be credited for Control Room and off-site doses based on the revised radiological analyses of the MHA, the PRVS is being removed as an ESPS function from TS 3.3.6

TS 3.7.10, Penetration Room Ventilation System (PRVS)

PRVS and its associated TS Bases will be removed from TS. The PRVS will not be credited for evaluating potential Control Room and off-site doses. This change results in an operational efficiency that is achievable from implementing the AST. The revised radiological analysis of the MHA are performed without taking credit for the PRVS filter system and the results of this analysis show that the offsite and Control Room doses remain below the Regulatory Guide 1.183 limits. Removal of this system from TS eliminates the requirement to demonstrate the effectiveness of this system in operation. This simplifies testing design and performance tasks.

TS 3.7.17, Spent Fuel Pool Ventilation System (SFPVS)

The NOTES are being deleted from the LCO.

The APPLICABILITY of TS 3.7.17 is being revised to include movement of 'recently irradiated fuel assemblies' in the spent fuel pools. The APPLICABILILITY of 'During crane operations with loads over the spent fuel pool' is being deleted.

Required Actions A.2.1 and B.1.1 are being revised to include 'recently irradiated fuel assemblies.'

The logical connectors AND for REQUIRED ACTIONS A.2.2 and B.1.2, REQUIRED ACTION (RA) A.2.2, RA B.1.2 and their associated COMPLETION TIMES are being deleted.

The Completion Time for SR 3.7.17.1 is being revised from 31 days to 31 days prior to movement of recently irradiated fuel assemblies AND 6 months.

TS 5.5, Programs and Manuals

TS 5.5.2, Containment Leakage Rate Testing Program

Part b of the leakage rate acceptance criteria will be deleted as a result of removing PRVS from the TS.

TS 5.5.12, Ventilation Filter Testing Program (VFTP)

References to PRVS will be removed from the VFTP.

PRVS Tests a, c, and f will be deleted. The tests will be relettered.

TS 5.6, Reporting Requirements

TS 5.6.6, Post Accident Monitoring (PAM) and Main Feeder Bus Monitor Panel (MFPMP) Report

The changes to TS 5.6.6, Post Accident Monitoring (PAM) and Main Feeder Bus Monitor Panel (MFPMP) Report, reflected in the submittal dated September 22, 2003, are no longer applicable. These pages are removed from the submittal.

TS Bases (TSB) 3.3.5, ESPS Analog Instrumentation

This section is affected by the removal of the PRVS from the ESPS and is being revised to remove all references to PRVS.

TSB 3.3.6, ESPS Manual Initiation

This section is affected by the removal of the PRVS from the ESPS and is being revised to remove all references to PRVS.

TSB 3.3.7, ESPS Automatic Digital Actuation Logic Channels

This section is affected by the removal of the PRVS from the ESPS and is being revised to remove all references to PRVS.

TSB 3.7.10, PRVS

The bases for TS 3.7.10 is being removed from the TS.

TSB 3.7.17, SFPVS

A statement is being added to the 'APPLICABLE SAFETY ANALYSIS' regarding retaining the SFPVS TS because of ALARA purposes.

The 'LCO' is being revised to delete the NOTES in their entirety.

The 'APPLICABILITY' is being revised to reference 'recently irradiated fuel assemblies.'

Action A.1 and A.2 will be revised to delete reference to crane operations with loads over the spent fuel pool.

Action B.1 will be revised to reflect to delete reference to crane operations with loads over the spent fuel pool.

The Completion Time for SR 3.7.17.1 was revised from 31 days to 31 days prior to movement of recently irradiated fuel AND 6 months. This will ensure the system is OPERABLE prior to movement of recently irradiated fuel. Since, the system is no longer credited in dose analysis calculations and is not required to maintain 10 CFR 50.67 dose limits, a relaxed testing frequency of 6 months is acceptable.

In the reference section, Regulatory Guide 1.25 will be revised to 1.183.

10 CFR 50.67 and Dose Calculations will be added to the reference section.

ATTACHMENT 4
NO SIGNIFICANT HAZARDS CONSIDERATION

ATTACHMENT 4
NO SIGNIFICANT HAZARDS CONSIDERATION

ATTACHMENT 4
DETERMINATION OF NO SIGNIFICANT HAZARDS CONSIDERATIONS

Standards for determining whether a license amendment involves no significant hazards considerations are contained in 10CFR50.92(c). The TS changes and modifications as proposed in this LAR have been evaluated in accordance with 10 CFR 50.92 and determined not to involve any significant hazards considerations.

The proposed LAR includes (1) implementing the AST for accident analysis as described in Regulatory Guide 1.183; (2) removing the PRVS and relaxing the SFPVS TS because they are no longer credited for Control Room and off-site doses; (3) revising the CRVS to allow for a one time completion time extension on Conditions B and C when entering the conditions to support implementation of the Control Room intake/booster fan modification; (4) lowering the Reactor Building leakage rate from 0.25 w%/day to 0.20 w%/day; (5) revising the VFTP radioactive methyl iodide removal acceptance criterion for SFPVS and CRVS Booster Fan trains; and (6) adoption of TSTF-51.

Plant modifications are also being proposed in concert with the proposed TS changes. They include relocating the existing Control Room outside air intake from the roof of the Auxiliary Building to the roof of the Turbine Building and installing dual intakes for each Control Room; re-routing HPI/LPI relief valve discharge back into the Reactor Building and replacing the existing Caustic Addition system with a passive system.

As a result of this evaluation, Duke has concluded:

1) The proposed amendment will not involve a significant increase in the probability of consequences of an accident previously evaluated.

   The AST and those plant systems affected by implementing the proposed changes to the TS are not assumed to initiate design basis accidents. The AST does not affect the design or operations of the facility. Rather, the AST is used to evaluate the consequences of a postulated accident. The implementation of the AST has been evaluated in the revisions to the analysis of the design basis accidents for ONS. Based on the results of these

analyses, it has been demonstrated that, with the requested changes, the dose consequences of these events meet the acceptance criteria of 10 CFR 50.67 and Regulatory Guide 1.183. Therefore, the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The AST and those plant systems affected by implementing the proposed changes to the TS are not assumed to initiate design basis accidents. The systems affected by the changes are used to mitigate the consequences of an accident that has already occurred. The proposed TS changes and modifications do not significantly affect the mitigative function of these systems. Consequently, these systems do not alter the nature of events postulated in the Safety Analysis Report nor do they introduce any unique precursor mechanisms. Therefore, the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3) The proposed amendment will not involve a significant reduction in the margin of safety.

The implementation of the AST, proposed changes to the TS and the implementation of the proposed modifications have been evaluated in the revisions to the analysis of the consequences of the design basis accidents for the ONS. Based on the results of these analyses, it has been demonstrated that with the requested changes the dose consequences of these events meet the acceptance criteria of 10 CFR 50.67 following the provisions of Regulatory Guide 1.183. Thus, the proposed amendment will not involve a significant reduction in the margin of safety.