Pacific Gas and Electric Company

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PG&E Letter DCL-03-034

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Docket No. 50-275, OL-DPR-80
Docket No. 50-323, OL-DPR-82
Diablo Canyon Units 1 and 2
License Amendment Request 03-05
Revision of Technical Specification (TS) 3.7.10, "Control Room Ventilation System (CRVS)," TS 3.7.12, "Auxiliary Building Ventilation System (ABVS)," TS 3.7.13, "Fuel Handling Building Ventilation System (FHBVS)," and TS 5.5.11, "Ventilation Filter Testing Program (VFTP)"

Dear Commissioners and Staff:

In accordance with 10 CFR 50.90, enclosed is an application for amendment to Facility Operating License Nos. DPR-80 and DPR-82 for Diablo Canyon Power Plant Units 1 and 2, respectively. The enclosed license amendment request (LAR) proposes to revise TS 5.5.11, "Ventilation Filter Testing Program (VFTP)," to change the surveillance frequency, penetration, and relative humidity requirements for laboratory testing of the charcoal adsorber for the control room, auxiliary building, and fuel handling building ventilation systems. This would also eliminate the charcoal preheater testing requirements. TS 3.7.10, "Control Room Ventilation System (CRVS)," and TS 3.7.12, "Auxiliary Building Ventilation System (ABVS)," will also be revised to be consistent with these changes. These changes are in accordance with Regulatory Guide 1.52, Revision 3, June 2001; Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal;" and the requirements in American Society for Testing and Materials D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon."

In addition, this LAR proposes to revise TS 3.7.10 by adding a note allowing the control room boundary to be open intermittently under administrative control; adding a new required TS Action for two CRVS trains being inoperable due to an inoperable control room boundary, and revising the relettered Condition F to add "for reasons other than Condition B." TS surveillance requirement (SR) 3.7.12.3 is revised to limit its applicability, and TS 3.7.13 "Fuel Handling Building Ventilation System (FHBVS)" is revised to add the word "recently" to qualify the irradiated fuel in the statement of applicability. These proposed revisions are made consistent with NUREG-1431, Revision 2, "Standard Technical Specifications Westinghouse Plants", April 2001, and limit unnecessary surveillance testing when the ABVS is actively performing its safety function.

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Enclosure 1 contains a description of the proposed changes, the supporting technical analyses, and the no significant hazards consideration determination. Enclosure 2 and 3 contain marked-up and revised TS pages, respectively. Enclosure 4 provides the marked-up TS Bases for information only.

The proposed changes are not required to address an immediate safety concern. Therefore, PG&E requests that the NRC review this LAR on a medium priority. PG&E also requests that the TS changes requested in this LAR be effective upon issuance of the license amendment, to be implemented within 60 days of issuance.

Sincerely,

David H. Oatley
Vice President and General Manager-Diablo Canyon

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Enclosures
cc: Edgar Bailey, DHS
Ellis W. Merschoff
David L. Proulx
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Diablo Distribution

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

	)	Docket No. 50-275
In the Matter of	)	Facility Operating License
PACIFIC GAS AND ELECTRIC COMPANY	)	No. DPR-80
	)	
Diablo Canyon Power Plant	)	Docket No. 50-323
Units 1 and 2	)	Facility Operating License
	)	No. DPR-82

AFFIDAVIT

David H. Oatley, of lawful age, first being duly sworn upon oath states that he is Vice President and General Manager – Diablo Canyon of Pacific Gas and Electric Company; that he is familiar with the content thereof; that he has executed this submittal of License Amendment Request 2003-05 "Revision of Technical Specification (TS) 3.7.10, "Control Room Ventilation System (CRVS)," TS 3.7.12, "Auxiliary Building Ventilation System (ABVS)," TS 3.7.13, "Fuel Handling Building Ventilation System (FHBVS)," and TS 5.5.11, "Ventilation Filter Testing Program (VFTP)" on behalf of said company with full power and authority to do so; and that the facts stated therein are true and correct to the best of his knowledge, information, and belief.

David H. Oatley
Vice President and General Manager – Diablo Canyon

Subscribed and sworn to before me this 2nd day of, April 2003.

Notary Public
State of California
County of San Luis Obispo

SANDRA L. RECTOR
Commission # 1339380
Notary Public - California
San Luis Obispo County
My Comm Expires Jan 12, 2006

EVALUATION

1.0 DESCRIPTION

This letter is a request to amend Facility Operating License Nos. DPR-80 and DPR-82 for Pacific Gas and Electric Company's Diablo Canyon Power Plant (DCPP) Units 1 and 2, respectively.

This license amendment request (LAR) proposes to revise Technical Specification (TS) 5.5.11, "Ventilation Filter Testing Program (VFTP)," to change the surveillance frequency, penetration, and relative humidity requirements for laboratory testing of the charcoal adsorber for the control room, auxiliary building, and fuel handling building ventilation systems. This would also eliminate the charcoal pre-heater testing requirements. TS 3.7.10, "Control Room Ventilation System (CRVS)," and TS 3.7.12, "Auxiliary Building Ventilation System (ABVS)," will also be revised to be consistent with these changes. These changes are in accordance with Regulatory Guide (RG) 1.52, Revision 3, June 2001; Generic Letter (GL) 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal;" and the requirements in American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon."

In addition, this LAR proposes to revise TS 3.7.10 by adding a note allowing the control room boundary to be open intermittently under administrative control; adding a required TS Action for two CRVS trains being inoperable due to an inoperable control room boundary, and revising the relettered Condition F to add "for reasons other than Condition B." TS surveillance requirement (SR) 3.7.12.3 is revised to limit its applicability, and TS 3.7.13, "Fuel Handling Building Ventilation System (FHBVS)" is revised to add the word "recently" to qualify the irradiated fuel in the statement of applicability. These proposed revisions are consistent with NUREG-1431, Revision 2, "Standard Technical Specifications Westinghouse Plants," April 2001, and limit unnecessary surveillance testing when the ABVS is actively performing its safety function.

2.0 PROPOSED CHANGE

The proposed change would revise TS 5.5.11.c as follows:

- Change the frequency of laboratory testing of the charcoal adsorber for the CRVS, ABVS and FHBVS from "at least once per 18 months and after every 720 hours of charcoal operation." to "at least once per 24 months and after every 720 hours of charcoal operation."

- Change the penetration and relative humidity acceptance criteria for the CRVS from "1.0% and 70%," to "2.5% and 95%," respectively.

- Change the penetration and relative humidity acceptance criteria for the ABVS from "6.0% and 70%," to "15% and 95%," respectively.

- Change the penetration acceptance criterion for the FHBVS from "4.3%" to "15%."

The proposed change would eliminate the TS 5.5.11.e requirement to demonstrate that the charcoal pre-heaters for the CRVS and ABVS dissipate "5 ± 1 kW" and "50 ± 5 kW," respectively, when tested in accordance with ANSI N510-1980 at least once per 24 months.

The proposed change would revise TS 3.7.10 as follows:

- Add a Note to the limiting condition for operation (LCO) that reads, "The control room boundary may be opened intermittently under administrative control."
- Revise TS SR 3.7.10.1 to read, "Operate each CRVS train for ≥ 15 minutes." It now requires that each control room ventilation system train be operated for ≥ 10 continuous hours with the heaters operating.
- Revise TS to add a new Condition B to the required TS Actions that states: "Two CRVS trains inoperable due to an inoperable control room boundary in MODE 1, 2, 3, or 4." The Required Action for this condition will be: "Restore control room boundary to OPERABLE status" and the Completion Time will be "24 hours." The existing Conditions will be re-lettered from B, C, D and E to C, D, E, and F.
- Revise TS relettered Condition F to read, "Two CRVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B." It now reads, "Two CRVS trains inoperable in MODE 1, 2, 3, or 4."

The proposed change would revise TS 3.7.12 as follows

- Revise TS Condition A from "The common HEPA filter and/or charcoal adsorber or manual initiated heaters inoperable," to read, "The common HEPA filter and/or charcoal adsorber inoperable."
- Required Action A.1 would be revised from, "Restore the common HEPA filter and charcoal absorber or manually initiated heater to operable status," to read, "Restore the common HEPA filter and charcoal adsorber to OPERABLE status."
- Revise the TS SR 3.7.12.1 from "Operate each ABVS train for ≥ 15 minutes, and one train for ≥ 10 continuous hours with the heater initiated manually from the control room," to read "Operate each ABVS train for ≥ 15 minutes."
- Add a Note to SR 3.7.12.3 which reads, "SR is not applicable to a specific ABVS train when that ABVS train is configured and performing its safety function."

The proposed change would revise TS 3.7.13 as follows:

- Revise the Applicability statement to read "During movement of recently irradiated fuel assemblies in the fuel handling building." It now reads "During movement of irradiated fuel assemblies in the fuel handling building."

In summary, the proposed amendment would change the surveillance frequency, penetration requirements, and relative humidity requirements for laboratory testing of the charcoal absorber for the control room, auxiliary building, and fuel handling building ventilation systems. It would also eliminate the charcoal preheater testing requirements. This proposed amendment also adds a specific required TS Condition applicable when two CRVS trains are inoperable due to an inoperable control room boundary, clarifies the applicability of a specific ABVS surveillance, and revises the Applicability statement for the FHBVS TS to apply when recently irradiated fuel is being moved.

The TS Bases will be revised to reflect the changes to these TS. A markup of those changes is provided in Enclosure 3 for information. These TS Bases changes will be implemented in accordance with TS 5.5.14, "Technical Specification (TS) Bases Control Program," upon NRC approval of this LAR.

3.0 BACKGROUND

Charcoal Testing Changes

Safety-related air-cleaning units used in the engineered safety feature (ESF) ventilation systems of nuclear power plants reduce the potential onsite and offsite consequences of a postulated radiological accident by adsorbing radioiodine. Analyses of design basis accidents assume particular safety related charcoal adsorption efficiencies when calculating onsite (control room operator) and offsite doses. To ensure that the charcoal filters used in these systems will perform in a manner that is consistent with the licensing basis, the DCPP TS require samples of charcoal taken from the air-cleaning units to be periodically tested in a laboratory to demonstrate their capability and effectiveness.

In GL 99-02, the NRC alerted licensees that testing nuclear-grade activated charcoal to standards other than ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," does not provide assurance for complying with their current licensing basis as it relates to the dose limits of General Design Criterion (GDC) 19 of Appendix A to 10 CFR Part 50, and subpart A of 10 CFR Part 100. GL 99-02 requested that all licensees determine whether their TS referenced ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS did not reference ASTM D3803-1989 were requested to either amend their TS to reference ASTM D3803-1989 or propose an alternate test protocol. In GL 99-02, the NRC staff indicated that they consider ASTM D3903-1989 to be the most accurate and realistic protocol for testing charcoal for ESF ventilation systems because it offers the greatest assurance of accurately and consistently determining the capability of the charcoal.

In PG&E letters DCL-99-150, "180 Day Response to NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Charcoal," dated November 24, 1999, and DCL-99-168, "Supplement to 180 Day Response to NRC Generic Letter 99-02," dated December 29, 1999, PG&E stated that the DCPP TS require that nuclear grade charcoal in the engineered safety feature systems be tested in accordance with the requirements of ASTM D3803-1989, and that no TS amendment or additional testing is required. The reference to ASTM D3803-1989 was incorporated into the TS by Amendments 113 and 111 for Units 1 and 2, respectively, dated May 28, 1996. The improved TS, issued May 28, 1999, by Amendments 135 and 135, also reference ASTM D3803-1989.

The current test requirements for the laboratory testing of charcoal samples are as follows:

Test Parameter	Control Room Filter Bank	Auxiliary Building Filter Bank	Fuel Handling Bldg Filter Bank
Pressure	101 kPa	101 kPa	101 kPa
Temperature	30 °C	30 °C	30 °C
Velocity	12.2 mpm	12.2 mpm	12.2 mpm
Relative Humidity	70%	70%	95%
Methyl Iodide Concentration	1.75 mg/m^3	1.75 mg/m^3	1.75 mg/m^3
Bed Depth	50 mm	50 mm	50 mm
Test Limit (Penetration)	1%	6%	4.3%
Pre-equilibration	2 hours	2 hours	2 hours
Equilibration	16 hours	16 hours	16 hours
Challenge	60 min	60 min	60 min
Elution	60 min	60 min	60 min
Test Standard	ASTM D3803-1989	ASTM D3803-1989	ASTM D3803-1989
Exception to Standard	70% RH	70% RH	None

In calculating the current penetration test limits, conservative safety factors of 5 for the CRVS and ABVS, and 7 for the FHBVS are assumed. The one DCPP exception to compliance with the recommended test parameters specified in ASTM D3803-1989 is the relative humidity requirement for the CRVS and ABVS. The current TS requirement is based on humidity control by preheaters which function to reduce the relative humidity of the incoming air to 70 percent or less prior to entering the charcoal. Consequently, to meet this 70 percent limit, the preheaters are required to be operable in accordance with TS 3.7.10 and 3.7.12. (Reference Final Safety Analysis Report (FSAR) Table 9.4-2)

The proposed amendment would permit laboratory testing of the charcoal adsorber to be done on a frequency consistent with other VFTP requirements, reduce conservatism in the penetration acceptance criteria by using a safety factor consistent with the safety factor specified in GL 99-02 allowing cost savings due to longer charcoal absorber life, and revise the relative humidity criteria for the control room and auxiliary building ventilation systems to be more conservative consistent with the ASTM D3803-1989 criteria. The change in the relative humidity requirement for the CRVS and ABVS would permit the TS charcoal preheater testing requirement to be eliminated, allowing increased flexibility in testing and operation of these systems.

<u>Technical Specification LCO Changes</u>

DCPP TS 3.7.10 is based on NUREG-1431, Revision 1, "Standard Technical Specifications Westinghouse Plants." NUREG 1431, Revision 1, did not specifically provide for the control room boundary to be opened intermittently under administrative control. However, when NUREG-1431, Revision 2, was issued, it specifically provided a note allowing this controlled breach of the boundary. The administrative controls include:

- For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area.

- For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

This LAR proposes the addition of this note in accordance with this NUREG-1431 revision, which will provide more flexibility in allowing continued operation when the control room boundary is intentionally made inoperable under administrative controls.

<u>Technical Specification Action Changes</u>

DCPP TS 3.7.10 is based on NUREG-1431, Revision 1, which included Condition E, addressing two CRVS trains being inoperable in Modes 1, 2, 3, or 4 for any reason. The Required Action is immediate entry into LCO 3.0.3. However, when NUREG-1431, Revision 2 was issued, it included a new Condition for two trains of the CRVS being inoperable specifically as a result of a control room boundary being inoperable in Mode 1, 2, 3, or 4. This addition of a new Condition was contingent on the licensee having written procedures in place to provide compensatory measures in the event of an intentional or unintentional entry into this Condition. This LAR proposes revisions consistent with NUREG-1431, Revision 2, which provide more flexibility by allowing continued operation for 24 hours when the control room boundary is intentionally or unintentionally made inoperable.

Change to Technical Specification Surveillance Requirement Applicability

DCPP TS 3.7.12 is based on NUREG-1431, Revision 1, which provided for a surveillance test every 24 months to verify the operability of the automatic actuation capabilities of the ABVS on a safety injection (SI) signal. This surveillance requires verification of system alignment and function on a SI signal to ensure operability. The clarification proposed in this LAR limits the applicability of this surveillance (SR 3.7.12.3) to periods when the ABVS is not actively performing its safety function and the automatic actuation on SI will result in a realignment of the ABVS. If the ABVS has been placed in its safety function configuration and is functioning in that configuration, then this surveillance would not be necessary and would not apply. However, when the system is returned to automatic, the surveillance is applicable and required to be current.

Change to Technical Specification Applicability

DCPP TS 3.7.13 is based on NUREG-1431, Revision 1, which provided for the applicability of the TS as follows: "During movement of irradiated fuel assemblies in the fuel handling building." However, when NUREG-1431, Revision 2 was issued, it added the word recently to this applicability statement as follows: "During movement of recently irradiated fuel assemblies in the fuel handling building." This LAR revision provides more flexibility in the handling of irradiated fuel assemblies in the fuel handling building by limiting the operability requirements of the heating, ventilation, and air condition (HVAC) system based on spent fuel assembly time since it was part of a critical reactor core and the resulting fission product decay.

4.0 TECHNICAL ANALYSIS

Charcoal Testing

The proposed change would revise the frequency of laboratory testing of the charcoal adsorber for the CRVS, ABVS, and FHBVS from "at least once per 18 months and after every 720 hours of charcoal operation." to "at least once per 24 months and after every 720 hours of charcoal operation." A review of DCPP surveillance test data indicates that the charcoal adsorber has adequate remaining life when tested at 18 months to operate for at least 24 months and would continue to satisfy the TS requirements when tested at this frequency.[1] This proposed change is also consistent with the NRC position in RG 1.52, Revision 3, dated June 2001.

The proposed change would revise the penetration acceptance criteria for the control room ventilation system from 1.0 percent to 2.5 percent, and the penetration acceptance criteria for the ABVS and FHBVS from 6.0 percent and 4.3 percent, respectively, to 15 percent. The percentage allowable penetration is defined to be equal to one minus 100 percent of the methyl iodide removal efficiency for charcoal credited in the accident analysis divided by the safety factor. The current TS penetration acceptance criteria are based on safety factors of 5 for the CRVS and ABVS, and 7 for the FHBVS. The methyl iodide removal efficiencies credited in the DCPP accident analysis are 95 percent for the CRVS, and 70 percent for the ABVS and FHBVS. The proposed penetration acceptance criteria of 2.5 percent, 15 percent, and 15 percent, for the CRVS, ABVS, and FHBVS, respectively, are calculated using the methyl iodide removal efficiencies credited in the DCPP accident analysis and a safety factor of greater than or equal to 2. This safety factor is consistent with GL 99-02, and is acceptable when the charcoal is tested in accordance with ASTM D3803-1989 at 30°C (86°F) and 95 percent relative humidity or at 70 percent relative humidity with humidity controls. ASTM D3803-1989 provides an accurate and realistic protocol for determining the capability of charcoal for ESF ventilation systems. Although the safety factors are decreased by this proposed change, they are still considered very conservative and will ensure that the filters function properly and maintain their design basis performance capability.

The proposed change would also require that charcoal for the CRVS and ABVS be tested at a relative humidity of 95 percent. The current TS acceptance criteria for relative humidity for these systems is 70 percent. This requirement was based on humidity control being provided by preheaters which function to reduce the relative humidity of the incoming air to 70 percent or less prior to entering the charcoal. As the relative humidity increases, the efficiency of methyl iodide removal by activated charcoal decreases. This is because the water vapor competes with the methyl iodide for adsorption sites on the charcoal and as the amount of water vapor increases with higher specified relative humidity, the methyl iodide adsorption rate decreases. Therefore, the proposed testing of the charcoal at a relative humidity of 95 percent would not take credit for humidity control, and is a more stringent test than that currently being performed.

Testing of the charcoal at a relative humidity of 95 percent will verify that the charcoal can perform its intended safety function (adsorption of methyl iodide consistent with the methyl iodide removal efficiencies assumed in the safety analyses) without humidity control to reduce the relative humidity of the incoming air to 70 percent or less prior to entering the charcoal. Therefore, the preheaters would no longer be credited in meeting safety analysis requirements, and would not need to function to mitigate a design basis accident. This testing of the charcoal at 95 percent relative humidity is consistent with the requirements of ASTM D3903-1989 and is considered to be an industry standard practice.

The proposed change would delete the TS 5.5.11.e requirement to demonstrate that the charcoal preheaters for the CRVS and ABVS dissipate 5 plus or minus 1 kW and 50 plus or minus 5 kW, respectively, when tested in accordance with ANSI N510-1980 at least once per 24 months. The proposed testing does not credit these heaters; therefore, the heaters are not required and do not meet the 10 CFR 50.36 criteria for determining the requirements to be specified in TS limiting conditions for operation LCOs.

Technical Specification LCO and Action Changes

The current DCPP TS 3.7. is based on NUREG-1431, Revision 1. The NUREG provided for a Condition E, which addressed two CRVS trains being inoperable in Modes 1, 2, 3, or 4 for any reason. The Required Action is immediate entry into LCO 3.0.3. In the TS bases for that Condition it was stated that: "If both CRVS trains are inoperable in MODE 1, 2, 3, or 4, the CRVS 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."

Although inoperability of the CRVS for any reason could potentially increase radiation exposure to the control room operators following an accident, the stated TS conditions allowed no flexibility. If the CRVS was inoperable for any reason, the plant had to enter LCO 3.0.3 immediately and initiate unit shutdown. This was considered to be a severe action in certain circumstances, such as a minor controlled or uncontrolled breach in the control room ventilation system boundary.

NUREG-1431, Revision 2, was issued and added a note to the LCO which allowed the control room boundary to be intermittently inoperable as long as it was under administrative controls. The administrative controls provided were:

- For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area.
- For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated.

Having this capability under administrative controls is reasonable based on the low probability of a design basis accident during an intermittent boundary breach. Controls in place to rapidly close the boundary are considered adequate protection during the TS Completion Time, based on the amount of time available from the initiation of any design basis accident to potential effect on the control room. Considering the time it takes to incur fuel damage, the containment capability of the various plant structures and components, environmental factors and operator actions that would be taken, there would be reasonable time to ensure completion of the closure of the control room ventilation system boundary.

In addition, NUREG 1431, Revision 2, separated out (as a new Condition) having two trains of the CRVS being inoperable specifically as a result of a control room boundary being inoperable in Modes 1, 2, 3, or 4. For this Condition, the Required Action is to restore the control room ventilation system boundary to operable status within 24 hours. This separation was contingent on the licensee having written procedures in place to provide compensatory measures in the event of an intentional or unintentional entry into this Condition. The Completion Time of 24 hours provides a reasonable time period for action based on the low probability of a design basis accident occurring during that time period and the use of the compensatory measures. This Completion Time allows sufficient time to diagnose, plan, possibly repair, and test most problems that would occur with the control room boundary.

In addition to the new Condition, NUREG-1431, Revision 2, revised the existing Condition dealing with having two CRVS trains inoperable by adding the words "for reasons other than Condition B." This revision was provided to complete the separation between inoperability as a result of a CRVS boundary breach and all other reasons.

To meet the requirements of this new Condition, PG&E will provide written procedures that control the implementation of the following compensatory measure to protect the operators whenever the control room ventilation system boundary is inoperable:

- Stationing a dedicated individual at the opening, who is in continuous communication with the control room operators, has a method to rapidly close the boundary opening, and is trained to perform that function.

Change to Technical Specification SR Applicability

Parts of the ABVS function provide general HVAC capabilities and equipment cooling within the auxiliary building. In addition, the ABVS is designed to provide for air cleanup from post loss of coolant accident recirculation leakage, such as a leaking emergency core cooling system (ECCS) pump seal. This air cleanup function is considered to be the ABVS safety function and is provided by a specific damper and fan configuration with airflow directed through a bank of high efficiency particulate air (HEPA) filters and charcoal adsorbers. To ensure that this safety function is available when required, the damper realignment and establishing of the airflow through the filters is initiated automatically by an SI signal. This actuation on an SI signal may include fan start and damper reposition or, whenever one of the ECCS pumps is operating the ABVS automatically aligns itself into its building and safeguards mode with the exhaust from the ECCS equipment area being routed through the non-ESF filtration train consisting of roughing and HEPA filters. While in this configuration, a valid SI signal will realign the ABVS system dampers to the cleanup function configuration; however, because the fans are already aligned properly, it will not change the fan alignment. This cleanup function and automatic actuation operability are controlled by TS 3.7.12. SR 3.7.12.3 verifies the automatic capability of the ABVS.

In addition to the automatic capability, the ABVS also has the capability of being manually placed and operated in any of its operational configurations, including its cleanup configuration. Once in the cleanup configuration, a valid SI signal would not cause any change to the ABVS configuration or function. The current TS SRs do not address this condition where the ABVS is already in its cleanup configuration and actively performing its safety function. As a result, the proposed note will limit the applicability of SR 3.7.12.3 when the ABVS is already in its safety function configuration (cleanup) and is verified to be providing that function. The intent of this change is only to specify that the SR is not applicable to this specific condition. The SR is considered applicable and must be met whenever the ABVS is not in this configuration. This change in the applicability will eliminate testing of a nonrequired function. This proposed change does not reduce the requirement for this surveillance to be current when the ABVS is returned to its automatic mode of operation or is taken out of its cleanup configuration.

<u>Changes to Technical Specification Applicability</u>

In NUREG-1431, Revision 2, "Standard Technical Specifications Westinghouse Plants," issued in June 2001, TS 3.7.13 "Fuel Building Air Cleanup System (FBACS)" was revised to add the word "recently" to qualify the condition of the irradiated fuel in the statement of applicability of this TS. This change was provided to allow more flexibility in the operation and required operability of the FBACS. The basis for this change is that the need for this system to operate diminishes as the time spent fuel assemblies have been removed from the reactor increases. There would be a point in time at which the dose consequences of a potential release from a fuel handling accident in the fuel handling building will be below the acceptable offsite release limits. As a result of this, Westinghouse provided licensees with guidance to evaluate this potential and determine at what point this would occur.

To determine the definition of "recently" for fuel assemblies at DCPP, a new fuel handling accident (FHA) in the fuel handling building (FHB) analysis was performed. This analysis determined at what point in time following reactor shutdown that the consequences of an FHA in the FHB would result in dose rates at the offsite boundaries that are considered acceptable. For this analysis, partial implementation of the alternate source term methodology is utilized in accordance with RG 1.183, "Alternative Radiological Source Terms For Evaluating Design Basis Accidents At Nuclear Power Reactors". The RG 1.183 FHA dose acceptance criteria for the exclusion area boundary (EAB) and low population zone (LPZ) is 6.3 rem TEDE for a release to the environment over a two-hour duration. In addition, the new analysis evaluated the control room dose consequences to assure that these remain below the 10 CFR 50, Appendix A, GDC 19, "Control Room" equivalent limits of 30 rem thyroid and beta skin, and 5 rem whole body.

The first of the two following tables shows the previous (current) exclusion area and offsite boundary dose consequences calculated for the FHA in the FHB. The values provided are from the FSAR Table 15.5-47. No previous values for the control room dose are given because there was no requirement for the control room dose to be determined for the previous FHA analysis in the FHB. The second table shows the new exclusion area, offsite boundary and control room dose consequences calculated for a FHA in the FHB at 100 hours after a fuel assembly is removed from the reactor.

Current Doses (from FSAR Table 15.5.47)

Dose (rem)	Thyroid		Whole Body	
	Analysis	Limit	Analysis	Limit
2-hr Exclusion Area Boundary	22.2	300	2.45	25
30 day Low Population Zone Boundary	0.923	300	0.102	25

New Doses

Dose (rem)	Thyroid		Whole Body	
	Analysis	Limit	Analysis	Limit
30 day Control Room	14.0	30	0.00466	5

Dose (rem)	TEDE	
	Analysis	Limit
2 hour EAB	4.27	6.3
2 hour LPZ	4.27	6.3

Fuel Handling Accident Analysis Methodology

The new FHA in the FHB analysis was performed using the Bechtel standard computer program LOCADOSE, NE319, Release 6.0. This analysis provides the resultant radiological doses for the control room, exclusion area boundary, and low population zone. The LOCADOSE, NE319 program has been accepted for use in the industry and has been verified and validated.

LOCADOSE calculates radioactive material activities within regions in the plant, radioactive releases from regions of the plant, and doses and dose rates within regions of the plant and offsite locations. The solutions are obtained by solving a system of coupled differential radiation transport equations with boundary values. The assumptions used in this analysis are consistent with RG 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," dated March 23, 1972, and RG 1.183. The assumptions are discussed below.

FHA Analysis Assumptions

The DCPP design basis FHA is defined as the dropping of a spent fuel assembly in the fuel handling building or inside containment. Both accidents assume the rupture of the cladding of all the fuel rods (264 rods) in one assembly. In addition, the new fuel handling building FHA case assumes that:

1. The radiological release is assumed to occur from a damaged fuel assembly located in the spent fuel pool (SFP) and uniformly mixes with the fuel handling building free volume above the SFP.

2. No credit is taken for the functionality of either FHBVS train's activated charcoal adsorber section.

3. The CRVS of each unit is conservatively assumed to remain in the normal mode of operation such that no charcoal filtration of the control room atmosphere intake flow or recirculation flow occurs.

4. Effectively all activity escapes from the FHB to the environment over a two-hour period.

5. The postulated accident occurs 100 hours after reactor shutdown. Fuel movement is not allowed prior to 100 hours after reactor shutdown per the TS Bases for TS 3.9.4 and TS 3.9.7. Radiological decay and daughter product build-up was taken into consideration during this period in the development of the source terms.

6. All of the gap activity in the damaged rods is released, and consists of 10 percent of the total noble gases other than Kr-85, 30 percent of the Kr-85, and 10 percent of the total radioactive iodine in the rods at the time of the accident.

7. The values assumed for individual fission product inventories are calculated for a source term assuming 105 percent full power operation (3580 Mw thermal) at the end of core life immediately preceding shutdown, and include a radial peaking factor of 1.65. The source term is a composite of the maximum source terms calculated for 3.5 percent enrichment at 1.0 MWD/KGU and 33.0 MWD/KGU and 4.5 percent enrichment at 1.0 MWD/KGU and 50.0 MWD/KGU.

8. The iodine gap inventory is composed of inorganic species (99.75 percent) and organic species (0.25 percent).

9. The effective overall fuel pool decontamination factors (DF) for the inorganic and organic species is assumed to be 200. The previous DCPP fuel handling

accident analysis in the fuel building used a fuel pool DF of 100. The use of a DF of 200 is consistent with RG 1.183, Appendix B, which states that if the depth of water above the damaged fuel is 23 feet or greater, the decontamination factors for the elemental and organic species are 500 and 1, respectively. This gives an overall effective decontamination factor of 200 (i. e., 99.5 percent of the total iodine release from the damaged rods is retained by the water). Based on TS 3.7.15, which requires at least 23 feet of water is maintained above the fuel stored in the SFP, a SFP DF of 200 is a reasonable assumption.

10. The retention of noble gases in the pool is negligible. Cesium and rubidium isotopes are assumed to be retained in the pool and do not result in any release to the environment. Therefore, these isotopes are not included in this calculation.

11. The thyroid dose conversion factors used to calculate the doses from this event are based on ICRP 30 values as documented in Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," USEPA Report EPA-5201/1-88-020, dated September 1988, and are incorporated into the LOCADOSE computer code. The ability to use the following ICRP-30 values was previously approved by the NRC and added to the DCPP TS for both Units 1 and 2 by license amendments 155/155, respectively and is consistent with the guidance provided in RG 1.183. The dose conversion factors used are:

I-131	1.08E+06 (Rem/Ci)
I-132	6.44E+03 (Rem/Ci)
I-133	1.80E+05 (Rem/Ci)
I-134	1.07E+03 (Rem/Ci)
I-135	3.13E+04 (Rem/Ci)

NUREG/CR-5009, "Assessment of the Use of Extended Burnup Fuel in Light Water Power Reactors," addresses high fuel burnup. High burnup fuel may have increased gap inventory available for release in a FHA. The NUREG concluded that, "a slight increase in inventory and fuel-cladding gap-release fractions will occur for some fission products in those rods at extended burnup." As a result, it indicates that, in the case of I-131, the gap release fraction could increase from 0.04 to 0.12 as fuel burnup increased from 33,000 MWD/MTU to 60,000 MWD/MTU. The NUREG states "Regulatory Guide (RG) 1.25 procedures may be used for extended burnup fuel. These procedures give conservative values for noble gas release fractions that are above calculated values for peak rod burnup of 60 GWd/t, except for I-131, which may be up to 20% higher."

Although this NUREG indicates that the iodine inventory could be higher in the high burnup fuel, the findings are based on very conservative assumptions that do not consider fuel assembly power levels that have a major effect on the available fission products. Based on the discussion below, the assumptions utilized in the DCPP analysis are sufficiently conservative to assure that a specific penalty for high-burnup is not required, and that the 20 percent increase in I-131 does not need to be specifically considered as indicated in NUREG/CR-5009.

RG 1.25 provides established and acceptable assumptions for use in the FHA analysis, and DCPP has used these assumptions as a starting point in its FHA analysis. Included in these assumptions are assumed gap release fractions and radial peaking factors for individual fission product inventories. In addition, the source term used in the DCPP FHA in the FHB analysis is conservatively based on a 105 percent of full power operation as compared to the 100 percent full power operation required by RG 1.25.

The use of a radial peaking factor allows for an uncomplicated treatment of the effects of power variations within the core. At DCPP, a peaking factor of 1.65 is assumed. This peaking factor represents a multiplier to the fission product inventory of the fuel assembly and conservatively accounts for assemblies which operate at a higher than average power level. The highest-power assemblies in the DCPP cores are new fuel assemblies that operate at relative power levels between 120 percent and 140 percent, which are considerably below the equivalent 165 percent power level assumed in the peaking factor. Assemblies that have accumulated substantial burnup (e.g., greater than 40 GWD/MTU), physically cannot operate at these high power levels due to depletion of the uranium inventory and corresponding reactivity reduction within the assembly. Consequently, the higher burnup assemblies operate at relatively lower power levels ranging up to approximately 110 percent. This reduced operating power level results in a reduced fission product inventory. Considering this reduced power level, an additional factor of 20 percent added to the equivalent peaking factor would result in a multiplier for the high burnup fuel of approximately 1.3, which is well below the peaking factor used of 1.65.

As discussed above, a comparison of the relative power levels of low-burnup fuel assemblies to high-burnup assemblies at DCPP shows a substantially lower power level for the higher-burnup assemblies. This reduced operating power level results in a reduced fission product inventory, and this reduction in power level is sufficient to assure that the actual total fission product inventory is less than the application of a generic power peaking factor of 1.65, which is adequate to conservatively determine a source term for the DCPP FHA analysis. As a result, the source term based on these conservative assumptions adequately bounds the 20 percent increase in I-131 predicted by NUREG/CR-5009.

In addition, the RG 1.183 value for the I-131 gap fraction is 0.08 and 0.05 the remainder of the iodine species. Since the DCPP analysis employs the more conservative RG 1.25 value of 0.10 for all of the analyzed iodine species, the source terms selected for this analysis are considered conservative for this application.

As a result of the above analysis the word "recently" is added to TS 3.7.13 applicability is defined as: Fuel that has occupied part of a critical reactor core within the previous 100 hours.

Summary

In summary, testing and operation of the charcoal adsorbers in the CRVS, ABVS, and FHBVS in accordance with the proposed criteria will continue to ensure that the charcoal adsorbers can perform their intended safety function. The separate Condition B for inoperability of two trains due to an inoperable control room boundary ensures that the operators are protected consistent with the intent of GDC 19 based on compensatory measures provided by written procedures. In addition, with all of the fuel assemblies in the fuel pool not having occupied part of a critical reactor core within the previous 100 hours, the release levels as a result of a FHA remain within the acceptable limits provided in NUREG-0800.

5.0 REGULATORY ANALYSIS

5.1 No significant Hazards Determination

Pacific Gas and Electric Company (PG&E) has evaluated whether or not a significant hazards consideration is involved with the proposed changes by focusing on the three standards set forth in 10 CFR 50.92 as discussed below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed changes revise the frequency (from 18 months to 24 months), and acceptance criteria for laboratory testing of the charcoal adsorbers in the engineered safety feature (ESF) ventilation systems. The testing is performed offsite on charcoal samples taken from the ventilation systems, and would have no impact on any accident initiator, or change the consequences of any previously analyzed accident. Continued compliance with industry standards and Diablo Canyon Power Plant test data ensure that the revised requirements would continue to ensure the charcoal adsorbers are capable of performing their intended safety function; therefore, the changes would not affect the accident mitigation capabilities of the ESF ventilation systems.

   The preheaters in the control room ventilation system (CRVS) and auxiliary building ventilation system (ABVS) are not initiators of analyzed events, are no longer credited in mitigating design basis accidents or transients, and are therefore not required for system operability. The deletion of the requirement to demonstrate the capability of the preheaters every 24 months, and the changes to the action requirements and surveillance requirements for the CRVS and ABVS would not affect the assumed accident mitigation capabilities of these ESF ventilation systems.

The proposed changes also provide for two trains of the CRVS to be inoperable for up to 24 hours as a result of the CRVS boundary being inoperable. This allowance is contingent on providing and implementing proceduralized compensatory measures to restore the boundary during that time period. Although this change does provide for an increase in the allowed time for continued plant operation in the applicable modes, its acceptability is based on the low probability of any design basis accident during that time period and the protection provided by the compensatory measures that would be established. In addition, this change has no impact on any accident initiator, and does not change the consequences of any previously analyzed accident, because the administrative controls will restore the boundary before it is required to protect control room personnel.

The proposed changes also provide for limiting the applicability of surveillance requirement (SR) 3.7.12.3, which verifies the operability of the ABVS on a safety injection (SI) signal. The limitation is imposed only when the ABVS is aligned and operating in its safety function configuration. Since the ABVS is already performing its safety function when it is in that condition, verifying the automatic capability to transfer to that configuration is unnecessary. Since this limitation is only during periods where the ABVS is in its safety function configuration it has no impact on any accident initiator, or change the consequences of any previously analyzed accident. In addition, this surveillance is still required to be current whenever the ABVS is returned to automatic.

The proposed changes also provide for limiting the required operability of the fuel handling building ventilation system (FHBVS) based on a minimum time period that all fuel assemblies in the fuel pool have not been part of a critical core. This change does reduce the current operability requirements for the FHBVS and increases the consequences of a fuel handling accident with the FHBVS inoperable. However, limiting the FHBVS operability requirements does not increase the probability of any accident, and as determined in the new fuel handling accident (FHA) analysis, the potential release levels are still well within acceptable limits and do not significantly increase the consequences of a FHA.

Therefore, the proposed changes do not involve a significant increase in the probability or consequences of any accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No

The ABVS, FHBVS and CRVS are accident response systems and as such cannot create accidents. The changes to the charcoal sample test requirements will not affect the method of operation of the systems. The proposed changes only affect the laboratory test acceptance criteria for the charcoal samples, and how the charcoal preheaters are credited for meeting technical specification (TS) requirements. These changes result in a more conservative testing methodology. Deletion of the preheater requirements from the TS is based on the heaters not being credited for mitigation of any accident condition and does not affect the operation of these systems. The design and operation of the CRVS, ABVS, and FHBVS are not affected by these changes. No new or different accident scenarios, transient precursors, failure mechanisms, or limiting single failures will be introduced as a result of these changes.

The proposed changes also provide for two trains of the CRVS to be inoperable for up to 24 hours as a result of the CRVS boundary being inoperable. This allowance requires proceduralized compensatory measures to protect the operators during that time period. Although this change does provide for an increase in the allowed time for continued plant operation, its acceptability is based on the low probability of any design basis accident during that time period and the protection provided by the compensatory measures that would be established. The design and operation of the control room ventilation system is not affected by this change.

The proposed changes also provide for limiting the applicability of SR 3.7.12.3, which verifies the operability of the ABVS on an SI signal. The limitation is imposed only when the ABVS is aligned and operating in its safety function configuration. Since the ABVS is already performing its safety function when it is in this condition, verifying the automatic capability to transfer to this configuration is unnecessary. Since this limitation is only during periods where the ABVS is in its safety function configuration, it does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes also provide for limiting the required operability of the FHBVS based on a minimum time period that all fuel assemblies in the fuel pool have not been part of a critical core. This change does reduce the current operability requirements for the FHBVS by limiting these requirements to the period when the system would be required to mitigate the radiological consequences of an accident to acceptable limits. However, the design and operation of the FHBVS is not affected by this change.

Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Do the proposed changes involve a significant reduction in a margin of safety?

Response: No

The charcoal adsorber sample laboratory testing protocol accurately demonstrates the required performance of the adsorbers in the CRVS and ABVS following a design basis accident or in the FHBVS following a fuel handling accident outside containment. The changes in charcoal testing acceptance criteria and frequency will not affect system performance or operation. They will continue to ensure that the charcoal will perform its safety function. The decontamination efficiencies used in the offsite and control room dose analyses are not affected by this change. Therefore the offsite and control room dose analyses are not affected by this change, and offsite and control room doses will remain within the limits of 10 CFR 100 and 10 CFR 50, Appendix A, GDC 19. Although there is a reduction in the safety factor provided by the previous testing protocol, the revised testing protocol follows current industry standards. These standards ensure adequate margin exists and that the charcoal will perform its design basis function. As a result, there is no significant reduction is a margin of safety.

The proposed changes also provide for two trains of the CRVS to be inoperable for up to 24 hours as a result of the control room boundary being inoperable. Although this change does provide for an increase in the allowed time for continued plant operation under certain conditions, its acceptability is based on a low probability of any design basis accident occurring during that time period and the added protection provided by the compensatory measures that would be established. The increase in inoperability could be considered to be a decrease in the margin of safety of this system. However, based on the low probability of a concurrent accident requiring system operability during the completion time for this condition and the ability of the compensatory measures to restore the boundary before it is needed if an accident occurs, this potential reduction in safety margin is not considered to be significant.

The proposed changes also provide for limiting the applicability of SR 3.7.12.3, which verifies the operability of the ABVS on a SI signal. The limitation is imposed only when the ABVS is aligned and operating in its safety function configuration. Since the ABVS is already performing its safety function when it is in this condition, verifying the automatic capability to transfer to this configuration is unnecessary. Since this limitation is only during periods where the ABVS is already in its safety function configuration, the margin of safety is actually increased because the ABVS does not have to change configuration as a result of an accident to perform its safety function.

The proposed changes also provide for limiting the required operability of the FHBVS based on a minimum time period ("recently irradiated fuel") that all fuel assemblies in the fuel pool have not been part of a critical core. This change does reduce the current operability requirements for the FHBVS by limiting operability to the period when the system would be required to mitigate the radiological consequences of an accident to acceptable limits. This proposed change creates the potential for increased dose in the control room and at the site boundary due to a FHA outside containment. However, the new analysis demonstrates that the resultant doses are well within the Regulatory Guide (RG) 1.183 limits and within the GDC 19 limits. In the case of the offsite dose values, they remain within the RG 1.183 limits, which is considered acceptable. Based on this, the margin of safety is not significantly reduced.

In the new FHA analysis, the offsite and control room doses due to a FHA outside containment have been evaluated using conservative assumptions, such as no credit being taken for the functionality of either FHBVS train's activated charcoal absorber sections, the control room ventilation system remains in normal mode with no charcoal filtration available, and all airborne activity caused by the FHA is released at a linear rate over two hours. These conservative assumptions ensure the results of the calculation bound the expected dose. The normal availability of the fuel handling building and control room filtration systems will reduce the potential control room and offsite doses in the event of a FHA, and provides additional margin to the calculated doses.

Therefore the proposed changes do not involve a significant reduction in any margin of safety.

Based on the above evaluations, PG&E concludes that the activities associated with the above described changes present no significant hazards consideration under the standards set forth in 10 CFR 50.92, and accordingly a finding by the NRC of no significant hazards consideration is justified.

5.2 Regulatory Requirements and Guidance

5.2.1 Regulatory Documents

Regulatory Guide 1.183, "Alternative Radiological Source Terms For Evaluating Design Basis Accidents at Nuclear Power Reactors," July 2000, provides acceptable methods and criteria for evaluating the radiological consequences of accidents, including a fuel handling accident.

10 CFR 50, Appendix A, GDC 19, "Control Room," requires adequate radiation protection under normal and accident conditions to permit access and occupancy of the control room without personnel receiving radiation exposure in excess of 5 Rem whole body, or its equivalent to any part of the body for the duration of the accident. This regulation specifies the control room exposure limits for a FHA.

10 CFR 50, Appendix A, GDC 61, "Fuel Storage and Handling and Radioactivity Control," requires that the fuel storage and handling, radioactive waste, and other systems which may contain radioactivity shall be designed to assure adequate safety under normal and postulated accident conditions. This GDC provides the requirement to design for a FHA.

NUREG-1431, Revision 2, "Standard Technical Specifications Westinghouse Plants," is issued by the NRC and contains the improved Standard Technical Specifications (STS) for Westinghouse plants. Revision 2 incorporated the cumulative changes to Revision 1, and resulted from the experience gained from license amendment applications to convert to these improved STS or adopt partial improvements to existing technical specifications. This document provides for the establishment and bases of a separate Condition for Technical Specification 3.7.10, "Control Room Emergency Filtration System (CREFS) of having two control room ventilation system trains inoperable for 24 hours as a result of a control room boundary being inoperable.

5.2.2 Design Bases (Updated Final Safety Analysis Report (UFSAR))

The DCPP design basis FHA is defined as the dropping of a spent fuel assembly in the fuel handling building or inside containment. Both analyses assume the rupture of the cladding of all the fuel rods in the dropped assembly. UFSAR Section 15.4.5.2.1 and Table 15.5-47, which will be revised per the new FHA analysis, discusses the radiological consequences of the postulated FHA outside containment.

5.2.3 Approved Methodologies

NRC RG 1.52, "Design, Testing and Maintenance Criteria for Post Accident Engineered Safety Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light Water Cooled Nuclear Power Plants," provides methods acceptable to the NRC staff for implementing the NRC's regulations in Appendix A to 10 CFR 50 with regard to design, testing, and maintenance criteria for air filtration and adsorption units of ESF atmospheric cleanup systems in light water coolant nuclear power plants. Revision 3, issued June 2001, provides the current NRC regulatory position related to those operation and maintenance related requirements being modified by this license amendment request.

NRC GL 99-02, was issued to alert nuclear power reactor licensees, except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel, that the NRC has determined that testing nuclear-grade activated charcoal to standards other than ASTM D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon," does not provide assurance for complying with the current licensing basis as it relates to the dose limits of 10 CFR 50, Appendix A, GDC 19 and 10 CFR 100, Subpart A. The GL requested that licensees determine whether their TS reference ASTM D3803-1989 for charcoal filter laboratory testing. Licensees whose TS did not reference ASTM D3803-1989 were requested to amend their TS to reference ASTM D3803-1989 or propose an alternative test protocol.

U.S. NRC RG 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," provides NRC guidance which describes a method acceptable to the NRC staff for licensee evaluation of the potential radiological consequences of a FHA.

U.S. NRC RG 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," issued in July 2000, provides new guidance on acceptable applications of alternative source terms. In Appendix B of this regulatory guide, guidance is provided on evaluating the radiological consequences of a FHA and acceptable overall decontamination factors of 200 if the water depth above the damaged fuel is greater than 23 feet. This decontamination factor is a relaxation over previous guidance and is used in the new FHA analysis in support of the proposed TS changes.

NUREG-0800, "U.S. NRC Standard Review Plan," Section 15.7.4, provides guidance to the NRC staff for the review and evaluation of system design features and plant procedures provided for the mitigation of the radiological consequences of postulated FHAs. Although DCPP is not subject to this NUREG, its guidance is used as a point of comparison in this submittal.

International Commission on Radiological Protection (ICRP) Publication 30, "Limits for Intakes of Radionuclides by Workers," dated 1979, provides thyroid dose conversion factors. These conversion factors replace those previously provided in RG 1.109, which is consistent with current NRC expectations.

NUREG/CR-5009, "Assessment of the Use of Extended Burnup Fuel in Light Water Reactors," provides guidance that an FHA offsite thyroid dose from I-131 could be increased by a factor of 1.2 for high-burnup fuel. DCPP has reviewed this guidance and found that the methodology and conservative assumptions concerning gap release fractions and radial peaking factors for individual fission product inventories used at DCPP and reflected in the FHA outside containment analysis adequately account for this guidance.

5.2.4 Analysis

Use of the safety factors specified in GL 99-02 to determine penetration acceptance criteria and testing of the charcoal in accordance with ASTM D3803-1989 and RG 1.52 criteria will assure that the dose removal efficiencies assumed in the accident analysis are met. Therefore, operation in accordance with the proposed changes will continue to provide assurance that the dose requirements in RG 1.183 and 10 CFR Part 50, Appendix A, GDC 19 are met.

The method of analysis used for evaluating the potential radiological consequences of the postulated FHA outside containment is consistent with RG 1.25, ICRP Publication 30, RG 1.183, and GDCs 19 and 61. The calculated exclusion area boundary and low population zone boundary doses are within the RG 1.183 criterion of 6.3 rem TEDE. In addition, the calculated control room doses are within the GDC-19 limits of five rem to the whole body and 30 rem to the thyroid. The analysis presented in Section 15.5.22 of the UFSAR, as will be revised per the new FHA analysis, demonstrates the adequacy of the plant design features for the mitigation of the radiological consequences of postulated FHAs.

5.2.5 Conclusion

The technical analysis performed by PG&E demonstrates that the charcoal filters in the CRVS, ABVS and FHBVS will perform their safety function consistent with the accident analysis assumptions. In addition, the proposed revisions to TS 3.7.10, TS 3.7.12, and TS 3.7.13 provide flexibility of operation and continued capability to adequately perform all safety functions consistent with the accident analyses. Therefore the operation of the plant with the proposed changes will be in compliance with the above regulatory requirements.

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ENVIRONMENTAL CONSIDERATION

PG&E has evaluated the proposed changes and has determined that the changes do not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amount of effluent that may be released offsite, or (iii) a significant increase in the individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), an environmental assessment of the proposed change is not required.

7.0. REFERENCES

1. Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Activated Charcoal;" dated June 3, 1999, including errata issued August 23, 1999.
2. Regulatory Guide 1.52, "Design, Testing and Maintenance Criteria for Post Accident Engineered Safety Feature Atmosphere Cleanup System Air Filtration and Adsorption Units of Light Water Cooled Nuclear Power Plants," Revision 3, issued June 2001.
3. PG&E letter DCL-99-150, "180 Day Response to NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Charcoal," dated November 24, 1999.
4. PG&E letter DCL-99-168, "Supplement to 180 Day Response to NRC Generic Letter 99-02, "Laboratory Testing of Nuclear-Grade Charcoal," dated December 29, 1999.
5. Amendments 113 and 111 to Facility Operating License Nos. DPR-80 and DPR-82, respectively, dated May 28, 1996.
6. Amendments 135 and 135 to Facility Operating License Nos. DPR-80 and DPR-82, respectively, dated May 28, 1999.
7. NRC Final Policy Statement on Technical Specification Improvements for Nuclear Power Reactors, published on July 22, 1993 (58FR39132)
8. NUREG-1431, Revision 1, "Standard Technical Specifications Westinghouse Plants"
9. NUREG-1431, Revision 2, "Standard Technical Specifications Westinghouse Plants," April 2001
10. 10 CFR 100, "Determination of Exclusion Area, Low Population Zone, and Population Center Distance."

11. FSAR Section 15.5.22, "Environmental Consequences of a Fuel Handling Accident."

12. FSAR Table 9.4-2, "Compliance With Regulatory Guide 1.52, (Revision 0, June 1973) Design, Testing, And Maintenance Criteria For Atmosphere Cleanup System Air Filtration And Adsorption Units Of Light-Water Cooled Nuclear Power Plants."

13. FSAR Table 15.5-47, "Summary of Offsite Doses From Fuel Handling Accident in the Fuel Handling Area (LOPAR FUEL)."

14. NUREG-0800, Standard Review Plan, Section 15.7.4, Rev. 1, July 1981.

15. 10 CFR 50, Appendix A, General Design Criteria 19, Control Room.

16. Regulatory Guide 1.25, "Assumptions Used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Facility for Boiling and Pressurized Water Reactors," dated March 23, 1972.

17. NUREG/CR-5009, "Assessment of the Use of Extended Burn-up Fuel in Light Water Reactors."

18. U.S. NRC Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," issued in July 2000.

19. American Society for Testing and Materials (ASTM) D3803-1989, "Standard Test Method for Nuclear-Grade Activated Carbon."

20. Federal Guidance Report No. 11, "Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion," USEPA Report EPA-5201/1-88-020, dated September 1988.

21. U.S. NRC Regulatory Guide (RG) 1.183, "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors," issued in July 2000.

8.0 Precedents

The proposed changes to the penetration acceptance criteria using a safety factor of 2 are consistent with the NRC regulatory position in GL 99-02. The NRC has approved several license amendment requests, submitted in response to GL 99-02, using that safety factor including, License Amendments (LA) 205 and 199 to Facility Operating License Nos. DPR-31 and DPR-41, for Turkey Point Units 3 and 4, respectively.

On April 23, 2002, the NRC issued LA Nos. 198 and 191 for the Catawba Nuclear Station, Units 1 and 2, respectively. These LAs allow the limitation of the requirement for operability of the fuel handling building ventilation system to periods of movement of recently irradiated fuel. For their units, recently irradiated fuel was defined as fuel that has occupied part of a critical reactor core within the previous 72 hours.

MARKUP OF TECHNICAL SPECIFICATION PAGES

5.5 Programs and Manuals

5.5.11 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal absorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and at the relative humidity specified below. Laboratory testing shall be completed at least once per ~~18~~ months and after every 720 hours of charcoal operation.

ESF Ventilation System	Penetration	RH
Control Room	~~1.0%~~	~~70%~~
Auxiliary Building	~~6.0%~~	~~70%~~
Fuel Handling Building	~~4.3%~~	95%

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested in accordance with ANSI N510-1980 at the system flowrate specified below ± 10% at least once per 24 months.

ESF Ventilation System	Delta P	Flowrate
Control Room	3.5 in. WG	2100 cfm
Auxiliary Building	3.7 in. WG	73,500 cfm
Fuel Handling Building	4.1 in. WG	35,750 cfm

~~e. Demonstrate that the charcoal pre-heaters for each of the ESF systems dissipate the value specified below when tested in accordance with ANSI N510-1980 at least once per 24 months.~~

~~ESF Ventilation System~~	~~Wattage~~
~~Control Room~~	~~5 ± 1 kW~~
~~Auxiliary Building~~	~~50 ± 5 kW~~

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

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Waste Gas Holdup System, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in temporary unprotected outdoor liquid storage tanks.

The gaseous radioactivity quantities shall be determined following the methodology in Regulatory Guide 1.24 "Assumptions Used For Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor Radioactive Gas Storage Tank Failure." The liquid radwaste quantities shall be maintained such that 10 CFR Part 20 limits are met.

(continued)

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation System (CRVS)

LCO 3.7.10 Two CRVS trains shall be OPERABLE.

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

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

ACTIONS

---NOTE---
ACTIONS apply simultaneously to both units.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable.	A.1 Restore CRVS train to OPERABLE status.	7 days
INSERT 1		
~~B.~~ C. Required Action and associated Completion Time of Condition A not met in MODE 1, 2, 3, or 4.	~~B~~.1 C.1 Be in MODE 3. AND ~~B~~.2 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.	~~C~~.1.1 D.1.1 Place OPERABLE CRVS train in pressurization mode. AND ~~C~~.1.2 D.1.2 Verify that the OPERABLE CRVS train is capable of being powered by an OPERABLE emergency power source. OR ~~C~~.2.1 D.2.1 Suspend CORE ALTERATIONS AND ~~C~~.2.2 D.2.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately Immediately Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION		COMPLETION TIME
~~D~~ E Two CRVS trains inoperable in MODE 5 OR 6, or during movement of irradiated fuel assemblies.	~~D~~ E.1	Suspend CORE ALTERATIONS.	Immediately
	AND		
	~~D~~ E.2	Suspend movement of irradiated fuel assemblies.	Immediately
~~E~~ F Two CRVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B. (ADD)	~~E~~ F.1	Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.10.1	Operate each CRVS train for ≥ ~~10 continuous hours with the heaters operating~~ 15 minutes (ADD).	31 days
SR 3.7.10.2	Verify that each CRVS redundant fan is aligned to receive electrical power from a separate OPERABLE vital bus.	31 days
SR 3.7.10.3	Perform required CRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.4	Verify each CRVS train automatically switches into the pressurization mode of operation on an actual or simulated actuation signal.	24 months
SR 3.7.10.5	Verify one CRVS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation.	24 months on a STAGGERED TEST BASIS

Insert 1

B. Two CRVS trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours

3.7 PLANT SYSTEMS

3.7.12 Auxiliary Building Ventilation System (ABVS)

LCO 3.7.12 Two ABVS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The common HEPA filter and/or charcoal adsorber ~~or manually initiated heater~~ inoperable.	A.1 Restore the common HEPA filter and charcoal adsorber ~~or manually initiated heater~~ to OPERABLE status.	24 hours
B. One ABVS train inoperable.	B.1 Restore ABVS train to OPERABLE status	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.12.1	---------- This surveillance shall verify that each ABVS train is aligned to receive electrical power from a separate OPERABLE vital bus. ----------	
	Operate each ABVS train for ≥ 15 minutes. ~~and one train for ≥ 10 continuous hours with the heater initiated manually from the control room.~~	31 days
SR 3.7.12.2	Perform required ABVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.3	Verify each ABVS train actuates on an actual or simulated actuation signal and the system realigns to exhaust through the common HEPA filter and charcoal adsorber.	24 months

(continued)

-NOTE-
SR IS NOT APPLICABLE TO A SPECIFIC ABVS TRAIN WHEN THAT ABVS TRAIN IS CONFIGURED AND PERFORMING ITS SAFETY FUNCTION.

ADD

No Changes

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.7.12.4	Not Used.	
SR 3.7.12.5	Not Used.	
SR 3.7.12.6	Verifying that leakage through the ABVS Dampers M2A and M2B is less than or equal to 5 cfm when subjected to a Constant Pressure or Pressure Decay Leak Rate Test in accordance with ASME N510-1989. The test pressure for the leak rate test shall be based on a maximum operating pressure as defined in ASME N510-1989, of 8 inches water gauge.	24 months

3.7 PLANT SYSTEMS

3.7.13 Fuel Handling Building Ventilation System (FHBVS)

LCO 3.7.13 Two FHBVS trains shall be OPERABLE.

APPLICABILITY: During movement of irradiated fuel assemblies in the fuel handling building. (Recently) — ADD

-----NOTE-----
LCO 3.0.3 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One FHBVS train inoperable.	A.1 Restore FHBVS train to OPERABLE status.	Immediately
B. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the fuel building.	B.1 Place the OPERABLE FHBVS train in operation and verify that it is capable of being powered from an OPERABLE emergency power source.	Immediately
	<u>OR</u>	
	B.2 Suspend movement of irradiated fuel assemblies in the fuel handling building.	Immediately
C. Two FHBVS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	C.1 Suspend movement of irradiated fuel assemblies in the fuel handling building.	Immediately

No Changes

SURVEILLANCE REQUIREMENTS

SURVEILLANCE		FREQUENCY
SR 3.7.13.1	Operate each FHBVS train for ≥ 15 minutes.	31 days
SR 3.7.13.2	Perform required FHBVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.3	Verify each FHBVS train actuates on an actual or simulated actuation signal.	24 months
SR 3.7.13.4	Verify one FHBVS train can maintain a pressure ≤ -0.125 inches water gauge with respect to atmospheric pressure during the post accident mode of operation.	24 months on a STAGGERED TEST BASIS
SR 3.7.13.5	Verify damper M-29 can be closed.	24 months

RETYPED TECHNICAL SPECIFICATION PAGES

5.5 Programs and Manuals

5.5.11 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for each of the ESF systems that a laboratory test of a sample of the charcoal absorber, when obtained as described in Regulatory Guide 1.52, Revision 2, shows the methyl iodide penetration less than the value specified below when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and at the relative humidity specified below. Laboratory testing shall be completed at least once per 24 months and after every 720 hours of charcoal operation.

ESF Ventilation System	Penetration	RH
Control Room	2.5%	95%
Auxiliary Building	15.0%	95%
Fuel Handling Building	15.0%	95%

d. Demonstrate for each of the ESF systems that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than the value specified below when tested in accordance with ANSI N510-1980 at the system flowrate specified below ± 10% at least once per 24 months.

ESF Ventilation System	Delta P	Flowrate
Control Room	3.5 in. WG	2100 cfm
Auxiliary Building	3.7 in. WG	73,500 cfm
Fuel Handling Building	4.1 in. WG	35,750 cfm

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

5.5.12 Explosive Gas and Storage Tank Radioactivity Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the Waste Gas Holdup System, the quantity of radioactivity contained in gas storage tanks, and the quantity of radioactivity contained in temporary unprotected outdoor liquid storage tanks.

The gaseous radioactivity quantities shall be determined following the methodology in Regulatory Guide 1.24 "Assumptions Used For Evaluating the Potential Radiological Consequences of a Pressurized Water Reactor Radioactive Gas Storage Tank Failure." The liquid radwaste quantities shall be maintained such that 10 CFR Part 20 limits are met.

(continued)

3.7 PLANT SYSTEMS

3.7.10 Control Room Ventilation System (CRVS)

LCO 3.7.10 Two CRVS trains shall be OPERABLE.

---NOTE---
The Control Room boundary may be opened intermittently under administrative controls.

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

ACTIONS

---NOTE---
ACTIONS apply simultaneously to both units.

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. One CRVS train inoperable.	A.1 Restore CRVS train to OPERABLE status.	7 days
B. Two CRVS trains inoperable due to inoperable control room boundary in MODE 1, 2, 3, or 4.	B.1 Restore control room boundary to OPERABLE status.	24 hours
C. Required Action and associated Completion Time of Condition A 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 (continued)

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.	D.1.1	Place OPERABLE CRVS train in pressurization mode. AND	Immediately
	D.1.2	Verify that the OPERABLE CRVS train is capable of being powered by an OPERABLE emergency power source.	Immediately
	OR		
	D.2.1	Suspend CORE ALTERATIONS AND	Immediately
	D.2.2	Suspend movement of irradiated fuel assemblies.	Immediately

(continued)

ACTIONS (continued)

CONDITION	REQUIRED ACTION	COMPLETION TIME
E. Two CRVS trains inoperable in MODE 5 OR 6, or during movement of irradiated fuel assemblies.	E.1 Suspend CORE ALTERATIONS. AND E.2 Suspend movement of irradiated fuel assemblies.	Immediately Immediately
F. Two CRVS trains inoperable in MODE 1, 2, 3, or 4 for reasons other than Condition B.	F.1 Enter LCO 3.0.3.	Immediately

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.10.1	Operate each CRVS train for ≥ 15 minutes.	31 days
SR 3.7.10.2	Verify that each CRVS redundant fan is aligned to receive electrical power from a separate OPERABLE vital bus.	31 days
SR 3.7.10.3	Perform required CRVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with VFTP
SR 3.7.10.4	Verify each CRVS train automatically switches into the pressurization mode of operation on an actual or simulated actuation signal.	24 months
SR 3.7.10.5	Verify one CRVS train can maintain a positive pressure of ≥ 0.125 inches water gauge, relative to the outside atmosphere during the pressurization mode of operation.	24 months on a STAGGERED TEST BASIS

3.7 PLANT SYSTEMS

3.7.12 Auxiliary Building Ventilation System (ABVS)

LCO 3.7.12 Two ABVS trains shall be OPERABLE.

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

ACTIONS

CONDITION	REQUIRED ACTION	COMPLETION TIME
A. The common HEPA filter and/or charcoal adsorber inoperable.	A.1 Restore the common HEPA filter and charcoal adsorber to OPERABLE status.	24 hours
B. One ABVS train inoperable.	B.1 Restore ABVS train to OPERABLE status	7 days
C. Required Action and associated Completion Time not met.	C.1 Be in MODE 3.	6 hours
	AND	
	C.2 Be in MODE 5.	36 hours

SURVEILLANCE REQUIREMENTS

	SURVEILLANCE	FREQUENCY
SR 3.7.12.1	-- This surveillance shall verify that each ABVS train is aligned to receive electrical power from a separate OPERABLE vital bus. -- Operate each ABVS train for ≥ 15 minutes.	31 days
SR 3.7.12.2	Perform required ABVS filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.12.3	-------------------NOTE------------------- SR is not applicable to a specific ABVS train when that ABVS train is configured and performing its safety function. -- Verify each ABVS train actuates on an actual or simulated actuation signal and the system realigns to exhaust through the common HEPA filter and charcoal adsorber.	24 months

(continued)

3.7 PLANT SYSTEMS

3.7.13 Fuel Handling Building Ventilation System (FHBVS)

LCO 3.7.13 Two FHBVS trains shall be OPERABLE.

APPLICABILITY: During movement of recently irradiated fuel assemblies in the fuel handling building.

---NOTE---

LCO 3.0.3 is not applicable.

ACTIONS

CONDITION	REQUIRED ACTION		COMPLETION TIME
A. One FHBVS train inoperable.	A.1	Restore FHBVS train to OPERABLE status.	Immediately
B. Required Action and associated Completion Time of Condition A not met during movement of irradiated fuel assemblies in the fuel building.	B.1	Place the OPERABLE FHBVS train in operation and verify that it is capable of being powered from an OPERABLE emergency power source.	Immediately
	<u>OR</u>		
	B.2	Suspend movement of irradiated fuel assemblies in the fuel handling building.	Immediately
C. Two FHBVS trains inoperable during movement of irradiated fuel assemblies in the fuel building.	C.1	Suspend movement of irradiated fuel assemblies in the fuel handling building.	Immediately

MARKUP OF TECHNICAL SPECIFICATION BASES PAGES
(For Information Only)

B 3.7 PLANT SYSTEMS

B 3.7.10 Control Room Ventilation System (CRVS)

BASES

BACKGROUND

The CRVS provides a protected environment from which operators can control the units from the common control room following an uncontrolled release of radioactivity, chemicals, or toxic gas.

The CRVS consists of two independent, redundant trains that recirculate and filter the control room air (one train from each unit). Each train consists of a heater, a prefilter, a high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and one pressurization supply fan, one filter booster fan, and one main supply fan. Ductwork, dampers, and instrumentation also form part of the system.

The CRVS is an emergency system, parts of which may also operate during normal unit operations. Upon receipt of an actuating signal, the normal air supply to the control room is isolated, and the stream of outside ventilation air from the pressurization system and recirculated control room air is passed through the system filter. The pressurization system draws outside air from either the north end or the south end of the turbine building based upon the wind direction or the absence of releases at the inlet. The prefilters remove any large particles in the air, to prevent excessive loading of the HEPA filters and charcoal adsorbers. ~~Continuous operation of each filter train for at least 10 hours per month, with the heater operating, reduces moisture buildup in the adsorbers.~~ The heaters are ~~is~~ important to the effectiveness of the charcoal adsorbers, but are not required for CRVS operability.

Manual or automatic actuation of the CRVS places the system in one of three states; 1) pressurization (Mode 4), 2) recirculation (Mode 3), or 3) smoke removal (Mode 2). Mode 4 is the only required mode for the CRVs to be considered OPERABLE. The other modes of operation are useful for certain emergency situations, such as control room smoke removal; but they are not required for CRVS OPERABILITY. Actuation of the system to the recirculation mode closes the unfiltered outside air intake and unfiltered exhaust dampers, and aligns the system for recirculation of the control room air through the redundant trains of HEPA and the charcoal filters. The pressurization mode also initiates pressurization and filtered ventilation of the air supply to the control room.

Outside air is filtered, diluted via pressure equalization with air from the mechanical equipment room, and added to the air being recirculated from the control room. Pressurization of the control room prevents infiltration of unfiltered air from the surrounding areas. The actions

(continued)

BASES

BACKGROUND (continued)

taken in the manual actuation of the recirculation mode are the same, except that the signal switches control room ventilation to an isolation alignment to prevent outside air from entering the control room.

To monitor the status of the booster fan(s) small plastic streamers are installed on the exhaust duct grates. These exhaust ducts are located in the back of the control room in the ceiling and are used to take suction on the control room atmosphere. These streamers will hang down when the booster fan(s) are not operating. Therefore if a booster fan is in operation the streamers will be "up". This will permit the operators to diagnose a problem with the booster fan or with the booster fan supply damper.

The pressurization mode is the only automatically actuated mode change since bulk chlorine gas is no longer kept onsite and the chlorine monitors which previously initiated the recirculation mode have been de-activated.

The air entering the control room is continuously monitored by radiation detectors. One detector output above the setpoint will cause actuation of the pressurization mode.

A single train will pressurize the control room equal to or greater than 0.125 inches water gauge. The CRVS operation in maintaining the control room habitable is discussed in the FSAR, Section 9.4.1 (Ref. 1).

Redundant supply and recirculation trains provide the required filtration should an excessive pressure drop develop across the other filter train. Normally open isolation dampers are arranged in series pairs so that the failure of one damper to shut will not result in a breach of isolation. The CRVS is designed in accordance with Seismic Category I requirements.

The CRVS is designed to maintain the control room environment for the duration of the most severe Design Basis Accident (DBA) without exceeding a 5 rem whole body dose or its equivalent to any part of the body.

APPLICABLE SAFETY ANALYSES

The CRVS components are arranged in redundant, safety related ventilation trains. The location of components and ducting ensures an adequate supply of filtered air to all areas requiring access. The CRVS provides airborne radiological protection for the control room operators, as demonstrated by the control room accident dose analyses for the most limiting design basis loss of coolant accident, fission product release presented in the FSAR, Chapter 15 (Ref. 2).

The analysis of toxic gas releases demonstrates that the toxicity limits are not exceeded in the control room following a toxic chemical release, as presented in Reference 1.

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

The worst case single active failure of a component of the CRVS, assuming a loss of offsite power, does not impair the ability of the system to perform its design function.

The CRVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant CRVS trains are required to be OPERABLE to ensure that at least one is available assuming a single failure disables the other train. The redundant train means a second train from the other unit (Ref. 5). Total system failure could result in exceeding a dose of 5 rem to the control room operator in the event of a large radioactive release.

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

a. main supply fan (one), filter booster fan (one) and pressurization fan (one) are OPERABLE;

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

c. ~~Heaters, d~~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 LCO is modified by a Note allowing the control room boundary to be opened intermittently under administrative controls. For entry and exit through doors, the administrative control of the opening is performed by the person(s) entering or exiting the area. For other openings, these controls consist of stationing a dedicated individual at the opening who is in continuous communication with the control room. This individual will have a method to rapidly close the opening when a need for control room isolation is indicated and will be trained to perform that function.

APPLICABILITY

In MODES 1, 2, 3, 4, 5, and 6, and during movement of irradiated fuel assemblies CRVS must be OPERABLE to control operator exposure during and following a DBA or the release from the rupture of an outside waste gas tank.

During movement of irradiated fuel assemblies, the CRVS must be OPERABLE to cope with the release from a fuel handling accident.

CRVS OPERABILITY requires that for MODE 5 and 6 and during movement of irradiated fuel assemblies in either unit, when there is only one OPERABLE train of CRVS, the OPERABLE CRVS train must be capable of being powered from an OPERABLE diesel generator that is directly associated with the bus which is energizing the OPERABLE

CRVS train. This is an exception to LCO 3.0.6.

(continued)

BASES (continued)

ACTIONS

The ACTIONS are modified by a NOTE that states that ACTIONS apply simultaneously to both units. The CRVS is common to both units.

A.1

When one CRVS train is inoperable, action must be taken to restore OPERABLE status within 7 days. In this Condition, the remaining OPERABLE CRVS train is adequate to perform the control room protection function. However, the overall reliability is reduced because a single failure in the OPERABLE CRVS train could result in loss of CRVS 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 boundary is inoperable in MODE 1, 2, 3, or 4, the CRVS trains cannot perform their intended functions. Action will be taken to restore an OPERABLE control room boundary within 24 hours. During the period the control room boundary is inoperable, appropriate compensatory measures shall be taken to protect control room operators from potential hazards such as radioactive contamination, toxic chemicals, smoke, temperature and relative humidity, and physical security. Preplanned measures shall be available to address these concerns for intentional and unintentional entry into the Condition. The 24-hour Completion Time is reasonable based on the low probability of a DBA occurring during this time period, and the use of the compensatory measures. The 24-hour Completion Time is a reasonable time to diagnose, plan and possibly repair, and test most problems with the control room boundary.

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

In MODE 1, 2, 3, or 4, if the inoperable CRVS 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~~C~~.1.1, D~~C~~.1.2, D~~C~~.2.1, and D~~C~~.2.2

In MODE 5 or 6, or during movement of irradiated fuel assemblies, if the inoperable CRVS train cannot be restored to OPERABLE status within the required Completion Time, action must be taken to immediately place the OPERABLE CRVS train in the pressurization mode. 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. If only one CRVS train is OPERABLE, the OPERABLE train must be capable of being powered from an OPERABLE diesel generator that is directly associated with the bus which is energizing the OPERABLE CRVS train. The power requirements for the one OPERABLE CRVS train assures that the ventilation function will not be lost during a fuel handling accident with a subsequent loss of off-site power. This is an exception to LCO 3.0.6.

An alternative to Required Action ~~C~~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.

(continued)

BASES

ACTIONS (continued)

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

In MODE 5 or 6, or during movement of irradiated fuel assemblies, with two CRVS 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~~E~~.1

If both CRVS trains are inoperable in MODE 1, 2, 3, or 4~~,~~ for reasons other than an inoperable control room boundary (i.e., Condition B), the CRVS 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.

SURVEILLANCE REQUIREMENTS

Once actuated due to a fuel handling accident the CRVS must be protected against a single failure. This protection, although not required for immediate accident response, is assured by requiring that a backup power supply be provided as described above in Applicability. This back up is assured via the performance of surveillances that verify the ability to transfer power supplies.

The 31 day procedural verification of the separate vital power supplies for the redundant fans assures system reliability.

SR 3.7.10.1

Standby systems should be checked periodically for ≥ 15 minutes 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, by initiating, from the control room, flow through the HEPA filter and charcoal adsorber using either redundant set of booster and pressurization supply fans, provides an adequate check of this system. ~~Monthly heater operations dry out any moisture accumulated in the charcoal from humidity in the ambient air. Systems with heaters must be operated for ≥ 10 continuous hours with the heaters energized and operating automatically. Each main supply fan, booster fan, and pressurization supply fan (unless already operating) must operate for one hour.~~ 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 assures that the emergency power alignment is appropriate for the operating conditions of the plant. With the power supply options available it is appropriate to verify that the redundant fans for each train are aligned to receive power from separate OPERABLE vital buses.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.10.3

This SR verifies that the required CRVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The CRVS filter tests are in accordance with ANSI N510-1980 (Ref. 3). The VFTP includes testing the performance of the HEPA filter, charcoal adsorber efficiency, minimum flow rate, and the physical properties of the activated charcoal. Specific test Frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.10.4

This SR verifies that each CRVS train automatically starts and operates in the pressurization mode on an actual or simulated actuation signal generated from a Phase "A" Isolation. The Frequency of 24 months is based upon the maintenance and operating history (Ref. 6).

SR 3.7.10.5

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 CRVS. During the pressurization mode of operation, the CRVS is designed to pressurize the control room ≥ 0.125 inches water gauge positive pressure with respect to the outside atmosphere in order to prevent unfiltered inleakage. The CRVS is designed to maintain this positive pressure with one train. The Frequency of 24 months on a STAGGERED TEST BASIS is based upon the maintenance and operating history (Ref. 6).

REFERENCES

1. FSAR, Section 9.4.1.
2. FSAR, Chapter 15.
3. ANSI N510-1980.
4. NUREG-0800, Section 6.4, Rev. 2, July 1981.
5. DCM S-23F.
6. LA 119/117, Revision to Technical Specification to Support Extended Fuel Cycles to 24 Months, April 14, 1997.

B 3.7 PLANT SYSTEMS

B 3.7.11 Not Used

B 3.7 PLANT SYSTEMS

B 3.7.12 AUXILIARY BUILDING VENTILATION SYSTEM (ABVS)

BASES

BACKGROUND

The ABVS filters air from the area of the active ECCS components during the recirculation phase of a loss of coolant accident (LOCA). The ABVS, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the ECCS pump room area, if one of the pumps is operating, and the auxiliary building.

The ABVS consists of two trains. Each train is powered by a separate vital bus and consists of a supply fan and an exhaust fan. A single roughing and HEPA filter is common to both trains for normal operations and a single roughing filter, HEPA filter, and charcoal adsorber bank and a single manually initiated heater are common to both trains for emergency operations. Ductwork, valves or dampers, and instrumentation also form part of the system,

The ABVS has several modes of operation. These modes include: (1) Building Only; (2) Building and Safeguards; and (3) Safeguards only. In the Building Only mode of operation, the ABVS provides ventilation flow to all parts of the auxiliary building except for the ECCS pump rooms, but does take suction from the ECCS rooms. If any ECCS pump is started, the ABVS will automatically re-align to the Building and Safeguards mode of operation. In the Building and Safeguards mode of operation, ventilation is provided to the entire auxiliary building, including the ECCS pump rooms. In the Safeguards Only mode of operation, only the ECCS pump rooms and the lower reaches of the auxiliary building are provided with ventilation. If a SI signal is generated, the system will automatically realign such that all exhaust flow from the ECCS pump rooms passes through the common HEPA filter/charcoal adsorber bank prior to being exhausted to atmosphere. Whenever an SI signal is generated, the operator can~~must~~ manually energize the heater from the control room.

The ABVS is discussed in the FSAR, Sections 9.4 2, and 15.5 (Refs. 1, and 2, respectively) since it may be used for normal, as well as post accident, ventilation and atmospheric cleanup functions. The primary purpose of the single manually initiated heater is to maintain the relative humidity at an acceptable level, consistent with iodine removal efficiencies per ASTM D 3803-1989 (Ref. 3). There is no redundant heater since the failure of the charcoal adsorber and heater train would constitute a second failure in addition to the RHR pump seal failure assumed in conjunction with a LOCA (Ref.7). The heaters are not required for ABVS operability.

(continued)

BASES (continued)

APPLICABLE SAFETY ANALYSES

The design basis of the ABVS is established by the large break LOCA. The system evaluation assumes a passive failure of the ECCS outside containment, such as an RHR pump seal failure, during the recirculation mode. In such a case, the system limits radioactive release to within the 10 CFR 100 (Ref. 5) limits. The analysis of the effects and consequences of a large break LOCA is presented in Reference 2. The ABVS also functions, following a LOCA, in those cases where the ECCS goes into the recirculation mode of long term cooling, to clean up releases of smaller leaks, such as from valve stem packing.

The ventilation flow is also required to maintain the temperatures of the operating ECCS motors within allowable limits. The ventilation function has been designed for single failure and the system will continue to function to provide its ECCS motor cooling function.

Two types of system failures are considered in the accident analysis for radiation release: 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 ABVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two trains of the ABVS 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).

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

An ABVS train is considered OPERABLE when its associated:

a. Supply and exhaust fans are OPERABLE;

b. The common roughing filter, HEPA filter and charcoal adsorber are not excessively restricting flow, and are capable of performing their filtration functions; and

c. ~~The single, manually initiated heater, d~~Ductwork, valves, and dampers are OPERABLE and air circulation can be maintained.

(continued)

BASES (continued)

APPLICABILITY

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

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

ACTIONS

A.1

With the common HEPA filter and/or charcoal adsorber bank ~~or manually initiated heater~~ inoperable, the cooling function of the ABVS for ECCS motors is maintained; however, the filtration system function is lost. Since the entire function of the system is not lost, a 24 hour completion time is provided to restore the filters.

The 24 hour completion time is acceptable because it is a common filter system and the Completion Time is shorter than the ECCS Completion Time. The 24 hour Completion Time is based on the low probability of a DBA occurring during this time period.

B.1

With one ABVS 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 ABVS function.

The 7 day Completion Time is appropriate because the risk contribution is less than that for the ECCS (72 hour Completion Time). 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 ABVS trains would result in the loss of both filtration and cooling capability; therefore, LCO 3.0.3 must be entered immediately.

C.1 and C.2

If the ABVS 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 operating experience, to reach the required unit conditions from full power conditions in an orderly manner and without challenging unit systems.

(continued)

BASES (continued)

SURVEILLANCE REQUIREMENTS

SR 3.7.12.1

Each ABVS train should be checked periodically to ensure that it functions properly. As the environment and normal operating conditions on this system are not severe, testing each train with flow through both the HEPA filter and charcoal adsorber bank once a month provides an adequate check on this system. ~~Monthly manual heater operations dry out any moisture that may have accumulated in the charcoal from humidity in the ambient air and ensures that the manually initiated heater emergency function is available. Systems with heaters must be operated ≥ 10 continuous hours with the heaters energized and operating automatically (filter temperature control). Since the ABVS has only one common charcoal filter, one train needs to be operated for ≥ 10 hours to dry out the filter and the other train only needs to be operated~~ Both ABVS trains shall be operated long enough (≥ 15 minutes) to verify all components are operating correctly. Monthly verification of the separate OPERABLE vital power supplies for the exhaust fans assures system redundancy. 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 ABVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The ABVS filter tests are in accordance with References 3 and 4. 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.

SR 3.7.12.3

The SR is modified by a Note, which limits the applicability of this SR when the ABVS is already in its safety function configuration and is verified to be capable of providing that function. The intent of this change is only to address this specific condition and the SR is considered applicable and must be met whenever the ABVS is not in that configuration.

~~SR 3.7.12.3~~

This SR verifies that each ABVS train actuates an actual or simulated actuation signal by verifying- that the system aligns to exhaust through the common HEPA filter and charcoal adsorber and that flow is established through the HEPA and charcoal adsorber (Ref. 3 and 4). The 24 month Frequency is based upon the maintenance and operating history (Ref. 8).

SR 3.7.12.4

Not Used.

SR 3.7.12.5

Not Used.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)	SR 3.7.12.6 This SR verifies the leak tightness of dampers that isolate flow to the normally operating filter train. This SR assures that the flow from the auxiliary building passes through the HEPA filter and charcoal adsorber unit when the ABVS Buildings and Safeguards or Safeguards Only modes have been actuated coincident with an SI. The 24 month Frequency is based upon the maintenance and operating history (Ref. 8).
REFERENCES	1. FSAR, Section 9.4.2. 2. FSAR, Section 15.5. 3. ASTM D 3803-1989 4. ANSI N510-1980 5. 10 CFR 100.11. 6. NUREG-0800, Section 6.5.1, Rev. 2, July 1981. 7. DCM S-23B, "Main Auxiliary Building Heating and Ventilation System". 8. LA 119/117, Revision to Technical Specifications to Support Extended Fuel Cycles to 24 Months, April 14, 1997.

B 3.7 PLANT SYSTEMS

B 3.7.13 Fuel Handling Building Ventilation System (FHBVS)

BASES

BACKGROUND

The FHBVS filters airborne radioactive particulates and radioactive iodine from the area of the fuel pool following a fuel handling accident. The FHBVS provides environmental control of temperature and humidity in the fuel pool area and for the AFW pump motors. The ventilation for the AFW pump motors is to provide cooling flow for EQ considerations, i.e., motor longevity. The ventilation is not required to function during an accident or for the few hours required to reach RHR conditions during a natural circulation cooldown.

The FHBVS consists of two independent and redundant trains. Each train consists of, an exhaust prefilter, high efficiency particulate air (HEPA) filter, an activated charcoal adsorber section for removal of gaseous activity (principally iodines), and an exhaust fan. A third non-vital exhaust fan is used for normal operation and has only a prefilter and a HEPA filter. Ductwork, valves or dampers, and instrumentation also form part of the system. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal or loss of the normal exhaust fan E-4.

The FHBVS is a standby system, parts of which may also be operated during normal plant operations. Upon receipt of the actuating signal, normal air discharge from the fuel handling building is isolated and the normal exhaust fan shuts down and the vital exhaust fans start and the stream of ventilation air discharges through the system filter trains. The prefilter removes any large particles in the air, to prevent excessive loading of the HEPA filter and charcoal adsorber.

The FHBVS is discussed in the FSAR, Sections 9.4.4 and 15.5 (Refs. 1, and 2, respectively) because it may be used for normal, as well as post (fuel handling) accident, atmospheric cleanup functions.

APPLICABLE SAFETY ANALYSES

The FHBVS design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident involving the handling of recently irradiated fuel. The analysis of the fuel handling accident, given in Reference 2, assumes that all fuel rods in an assembly are damaged. The DBA analysis of the fuel handling accident assumes that only one train of the FHBVS is functional due to a single failure that disables the other train. The accident analysis accounts for the reduction in airborne radioactive material provided by the one remaining train of this filtration system. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident. Due to radioactive decay, the FHBVS is only required to isolate during fuel handling accidents involving the handling of recently irradiated fuel (i. e., fuel that has occupied part of a critical reactor core within the previous 100 hours). In accordance with assumptions made in the fuel handling accident

(continued)

BASES

APPLICABLE SAFETY ANALYSES (continued)

analysis, loss of offsite power is not considered concurrent with a fuel handling accident. However, loss of power is enveloped by the fuel handling accident analysis. To maximize FHBVS capability to mitigate the consequences of a fuel handling accident, at least one of the FHBVS trains must be capable of being supplied from an operable emergency diesel generator at all times whenever fuel movement of recently irradiated fuel is taking place in the spent fuel pool. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 3).

The FHBVS satisfies Criterion 3 of 10 CFR 50.36(c)(2)(ii).

LCO

Two independent and redundant trains of the FHBVS are required to be OPERABLE to ensure that at least one train is available, assuming a single failure that disables the other train. In accordance with assumptions made in the fuel handling accident analysis, loss of offsite power is not considered concurrent with a fuel handling accident. However, loss of power is enveloped by the fuel handling accident analysis. This requires that when two trains of the FHBVS are OPERABLE, at least one train of the FHBVS must be capable of being powered from an OPERABLE diesel generator that is directly associated with the bus which energizes the FHBVS train. When only one train is OPERABLE, an OPERABLE diesel generator must be directly associated with the bus which energizes that one OPERABLE FHBVS train. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 4) limits in the event of a fuel handling accident.

The FHBVS is considered OPERABLE when the individual components necessary to control releases from fuel handling building are OPERABLE in both trains. An FHBVS train is considered OPERABLE when its associated:

a. Exhaust fan is OPERABLE;

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

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

(continued)

BASES (continued)

APPLICABILITY

In MODE 1, 2, 3, 4, 5 or 6, the FHBVS is not required to be OPERABLE since it provides no safety function associated with these MODES of operation.

During movement of recently irradiated fuel in the fuel handling building, the FHBVS is required to be OPERABLE to alleviate the consequences of a fuel handling accident.

ACTIONS

The Required Actions are modified by a Note indicating that LCO 3.0.3 does not apply.

If moving irradiated fuel assemblies in MODE 5 or 6, LCO 3.0.3 would not specify any action. If moving irradiated fuel assemblies while in MODES 1, 2, 3, and 4, the fuel movement is independent of reactor operations. Therefore, inability to suspend movement of irradiated fuel assemblies is not sufficient reason to require a reactor shutdown.

A.1

With one FHBVS train inoperable, action must be taken to restore OPERABLE status immediately.

B.1 and B.2

When Required Action A.1 cannot be completed within the required Completion Time, during movement of recently irradiated fuel assemblies in the fuel building, the OPERABLE FHBVS~~BACS~~ train must be started immediately and verify that it has an OPERABLE emergency power source and is discharging through its HEPA filter and charcoal adsorber. Or suspend movement of recently irradiated fuel assemblies in the fuel handling building. The suspension of movement of fuel assemblies does not preclude movement of assemblies to a safe position. This action ensures that the remaining train is OPERABLE, that no undetected failures preventing system operation will occur, and that any active failure 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 involving handling recently irradiated fuel. This does not preclude the movement of fuel assemblies to a safe position.

C.1

When two trains of the FHBVS are inoperable during movement of recently irradiated fuel assemblies in the fuel handling building, suspend movement of recently irradiated fuel assemblies in the fuel handling building. This does not preclude the movement of fuel assemblies to a safe position.

(continued)

BASES

SURVEILLANCE REQUIREMENTS

Once actuated due to a fuel handling accident the FHBVS must be protected against a single failure coincident with a loss of offsite power. Protection against a loss of power, although not required for immediate accident response, is assured by requiring that a backup power supply be provided as described above in the LCO section. This back up is assured via the performance of non-TS surveillances.

SR 3.7.13.1

Standby systems should be checked periodically to ensure that they function properly. As the environmental and normal operating conditions on this system are not severe, testing each train once every month provides an adequate check on this system. This testing requires establishing air flow through both the HEPA filters and charcoal adsorbers.

Systems without heaters need only be operated 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 available.

SR 3.7.13.2

This SR verifies that the required FHBVS testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The FHBVS filter tests are in accordance with References 5 and 6. 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.

SR 3.7.13.3

This SR verifies that each FHBVS train starts and operates on an actual or simulated actuation signal and directs its exhaust flow through the HEPA Filters and charcoal adsorber banks. The 24 month Frequency is consistent with Reference 9.

(continued)

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.4

This SR verifies the integrity of the fuel handling building enclosure. The ability of the fuel handling building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the FHBVS. During the post accident mode of operation, the FHBVS is designed to maintain a slight negative pressure in the fuel handling building, to prevent unfiltered LEAKAGE. The FHBVS is designed to maintain the building pressure ≤ -0.125 inches water gauge with respect to atmospheric pressure. The 24 month Frequency (on a STAGGERED TEST BASIS) is based upon the maintenance and operating history (Ref. 9).

SR 3.7.13.5

Operation of damper M-29 is necessary to ensure that the system functions properly. The operability of damper M-29 is verified if it can be closed. The 24 month Frequency is consistent with Reference 9.

REFERENCES

1. FSAR, Section 9.4.4.
2. FSAR, Section 15.5.
3. Regulatory Guide 1.25.
4. 10 CFR 100.
5. ASTM D 3802-1989
6. ANSI N510-1980.
7. NUREG-0800, Section 6.5.1, Rev. 2, July 1981.
8. DCM S-23D, "Fuel handling Building HVAC System."
9. LA 119/117, Revision to Technical Specification to Support Extended Fuel Cycles to 24 Months, April 14, 1997.