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3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the Reactor Trip System instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each Reactor Trip System instrumentation channel and interlock and the automatic trip logic shall be demonstrated OPERABLE by performance of the Reactor Trip System Instrumentation Surveillance Requirements specified in Table 4.3-1.

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4.3.1.2 The REACTOR TRIP SYSTEM RESPONSE TIME of each Reactor trip function shall be demonstrated to be within its limit at least once per 18 months. Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once every N times 18 months where N is the total number of redundant channels in a specific Reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

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Item 1

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS Instrumentation Channel or Interlock Trip Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Values column of Table 3.3-4, adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation Channel or Interlock Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status with its Trip Setpoint adjusted consistent with the Trip Setpoint value.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements specified in Table 4.3-2.

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4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 18 months. Each test shall include at least one train such that both trains are tested at least once per 36 months and one channel per function such that all channels are tested at least once per N times 18 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" column of Table 3.3-3.

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TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION
SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALI-BRATION	ANALOG OPERA-TIONAL TEST	TRIP ACTUATING OPERA-TIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Safety Injection, (Reactor Trip Feedwater Isolation, Start Diesel Generators, Containment Fan Cooler Units, and Component Cooling Water)								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High	S	R	Q	N.A.	N.A	N.A.	N.A.	1, 2, 3, 4
d. Pressurizer Pressure-Low	S	R	Q	N.A	N.A.	N.A.	N.A.	1, 2, 3
e. DELETED								
f. Steam Line Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2. Containment Spray			ITEM 3					
a. Manual Initiation	N.A.	N.A.	N.A.	~~R~~ R24	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and transferring spray function to a RHR System taking suction from the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;

b. By verifying that on recirculation flow, each pump develops a differential pressure of greater than or equal to 205 psid when tested pursuant to Specification 4.0.5;

c. At least once per ~~18 months~~ REFUELING INTERVAL by:

Item 4 1) Verifying that each automatic valve in the flow path actuates to its correct position on a Phase "B" Isolation test signal, and

Item 5 2) Verifying that each spray pump starts automatically on a Phase "B" Isolation test signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days by:

1) Initiating flow through the HEPA Filter And Charcoal Adsorber System and verifying that either redundant set of booster and pressurization supply fans operate for at least 10 continuous hours with the heaters operating.

2) Verifying that each Ventilation System redundant fan is aligned to receive electrical power from a separate OPERABLE vital bus, and

3) Starting (unless already operating) each main supply fan, booster fan, and pressurization supply fan, and verifying that it operates for 1 hour.

REFUELING INTERVAL

c. At least once per ~~18 months~~ or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

ITEM 6 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 2100 cfm ± 10%;

ITEM 7

DELETE

~~2) Verifying within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%; and~~

ITEM 8 ~~3)~~ 2) Verifying a system flow rate of 2100 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

ITEM 9

d. a After 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%;

INSERT

At least once per 18 months, or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3)

SURVEILLANCE REQUIREMENTS (Continued)

e. At least once per ~~18 months~~ REFUELING INTERVAL by:

ITEM 10 1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.5 inches Water Gauge while operating the system at a flow rate of 2100 cfm ± 10%;

ITEM 11 2) Verifying that on a Phase "A" Isolation test signal, the system automatically switches into the pressurization mode of operation with approximately 27% (determined by damper position) of the flow through the HEPA filters and charcoal adsorber banks;

ITEM 12 3) Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere during the pressurization mode of system operation; and

ITEM 13 4) Verifying that the heaters dissipate 5 ± 1 kW when tested in accordance with ANSI N510-1980.

f. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 or a DOP test aerosol while operating the system at a flow rate of 2100 cfm ± 10%; and

g. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon test gas while operating the system at a flow rate of 2100 cfm ± 10%.

3/4.7.6 AUXILIARY BUILDING SAFEGUARDS AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two Auxiliary Building Safeguards Air Filtration System exhaust trains with one common HEPA filter and charcoal adsorber bank and at least two exhaust fans shall be OPERABLE.

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

ACTION:

a. With the HEPA filter and charcoal adsorber bank inoperable, restore the HEPA filter and charcoal adsorber bank to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With only one exhaust fan OPERABLE, restore at least two exhaust fans to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each Auxiliary Building Safeguards Air Filtration System train shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1) Initiating flow through the HEPA filter and charcoal adsorber bank and verifying that the train operates for at least 10 continuous hours with the heaters operating, and

2) Verifying that each exhaust fan is aligned to receive electrical power from a separate OPERABLE vital bus.

b. At least once per ~~18 months~~ REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, by:

SURVEILLANCE REQUIREMENTS (Continued)

ITEM 14 1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 73,500 cfm ± 10%;

DELETE

ITEM 15 2) ~~Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 6%; and~~

ITEM 16 2) ~~3)~~ Verifying a system flow rate of 73,500 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

ITEM 17 c. a~~A~~fter every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 6%.

INSERT

d. At least once per ~~18 months~~ REFUELING INTERVAL by:

ITEM 18 1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.7 inches Water Gauge while operating the system at a flow rate of 73,500 cfm ± 10%,

ITEM 19 2) Verifying that flow is established through the HEPA filter and charcoal adsorber bank on a Safety Injection test signal, and

ITEM 20 3) Verifying that the heaters dissipate 50 ± 5 kW when tested in accordance with ANSI N510-1980.

ITEM 21 4) Verifying that leakage through the Auxiliary Building Safeguards Air Filtration System 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.

At least once per 18 months, or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3)

REFUELING OPERATIONS

3/4.9.12 FUEL HANDLING BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 Two Fuel Handling Building Ventilation Systems shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION:

a. With one Fuel Handling Building Ventilation System inoperable, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE Fuel Handling Building Ventilation System is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With no Fuel Handling Building Ventilation System OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool until at least one Fuel Handling Building Ventilation System is restored to OPERABLE status.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required Fuel Handling Building Ventilation Systems shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes;

b. At least once per ~~18 months~~ REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

ITEM 22 1) Visually verifying that, with the system operating at a flow rate of 35,750 cfm ± 10% and exhausting through the HEPA filters and charcoal adsorbers, the damper valve M-29 is closed;

ITEM 23 2) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedures guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 35,750 cfm ± 10%;

SURVEILLANCE REQUIREMENTS (Continued)

DELETE

ITEM 24

~~3) Verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 4.3%; and~~

ITEM 25

3) ~~4)~~ Verifying a system flow rate of 35,750 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

ITEM 26

c. a. After every 720 hours of charcoal adsorber operation by verifying within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 4.3%;

INSERT

REFUELING INTERVAL

d. At least once per ~~18 months~~ by:

ITEM 27

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 4.1 inches Water Gauge while operating the system at a flow rate of 35,750 cfm ± 10%,

ITEM 28

2) Verifying that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks, and

ITEM 29

3) Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere during system operation.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 35,750 cfm ± 10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon test gas while operating the system at a flow rate of 35,750 cfm ± 10%.

At least once per 18 months or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3)

Attachment C
PG&E Letter DCL-96-129

PROPOSED TECHNICAL SPECIFICATION PAGES

3/4.3 INSTRUMENTATION

3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.1 As a minimum, the Reactor Trip System instrumentation channels and interlocks of Table 3.3-1 shall be OPERABLE with RESPONSE TIMES as shown in Table 3.3-2.

APPLICABILITY: As shown in Table 3.3-1.

ACTION:

As shown in Table 3.3-1.

SURVEILLANCE REQUIREMENTS

4.3.1.1 Each Reactor Trip System instrumentation channel and interlock and the automatic trip logic shall be demonstrated OPERABLE by performance of the Reactor Trip System Instrumentation Surveillance Requirements specified in Table 4.3-1.

4.3.1.2 The REACTOR TRIP SYSTEM RESPONSE TIME of each Reactor trip function shall be demonstrated to be within its limit at least once per 24 months. Each test shall include at least one train such that both trains are tested at least once per 48 months and one channel per function such that all channels are tested at least once every N times 24 months where N is the total number of redundant channels in a specific Reactor trip function as shown in the "Total No. of Channels" column of Table 3.3-1.

INSTRUMENTATION

3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.2 The Engineered Safety Features Actuation System (ESFAS) instrumentation channels and interlocks shown in Table 3.3-3 shall be OPERABLE with their Trip Setpoints set consistent with the values shown in the Trip Setpoint column of Table 3.3-4 and with RESPONSE TIMES as shown in Table 3.3-5.

APPLICABILITY: As shown in Table 3.3-3.

ACTION:

a. With an ESFAS Instrumentation Channel or Interlock Trip Setpoint less conservative than the value shown in the Trip Setpoint column but more conservative than the value shown in the Allowable Values column of Table 3.3-4, adjust the Setpoint consistent with the Trip Setpoint value.

b. With an ESFAS Instrumentation Channel or Interlock Trip Setpoint less conservative than the value shown in the Allowable Values column of Table 3.3-4, declare the channel inoperable and apply the applicable ACTION statement requirements of Table 3.3-3 until the channel is restored to OPERABLE status with its Trip Setpoint adjusted consistent with the Trip Setpoint value.

SURVEILLANCE REQUIREMENTS

4.3.2.1 Each ESFAS instrumentation channel and interlock and the automatic actuation logic and relays shall be demonstrated OPERABLE by the performance of the Engineered Safety Feature Actuation System Instrumentation Surveillance Requirements specified in Table 4.3-2.

4.3.2.2 The ENGINEERED SAFETY FEATURES RESPONSE TIME of each ESFAS function shall be demonstrated to be within the limit at least once per 24 months. Each test shall include at least one train such that both trains are tested at least once per 48 months and one channel per function such that all channels are tested at least once per N times 24 months where N is the total number of redundant channels in a specific ESFAS function as shown in the "Total No. of Channels" column of Table 3.3-3.

TABLE 4.3-2

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS

FUNCTIONAL UNIT	CHANNEL CHECK	CHANNEL CALI-BRATION	ANALOG OPERA-TIONAL TEST	TRIP ACTUATING OPERA-TIONAL TEST	ACTUATION LOGIC TEST	MASTER RELAY TEST	SLAVE RELAY TEST	MODES FOR WHICH SURVEILLANCE IS REQUIRED
1. Safety Injection, (Reactor Trip Feedwater Isolation, Start Diesel Generators, Containment Fan Cooler Units, and Component Cooling Water)								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4
d. Pressurizer Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
e. DELETED								
f. Steam Line Pressure-Low	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3
2. Containment Spray								
a. Manual Initiation	N.A.	N.A.	N.A.	R24	N.A.	N.A.	N.A.	1, 2, 3, 4
b. Automatic Actuation Logic and Actuation Relays	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q	1, 2, 3, 4
c. Containment Pressure-High-High	S	R	Q	N.A.	N.A.	N.A.	N.A.	1, 2, 3, 4

CONTAINMENT SYSTEMS

3/4.6.2 DEPRESSURIZATION AND COOLING SYSTEMS

CONTAINMENT SPRAY SYSTEM

LIMITING CONDITION FOR OPERATION

3.6.2.1 Two Containment Spray Systems shall be OPERABLE with each Spray System capable of taking suction from the RWST and transferring spray function to a RHR System taking suction from the containment sump.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one Containment Spray System inoperable, restore the inoperable Spray System to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours; restore the inoperable Spray System to OPERABLE status within the next 48 hours or be in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.2.1 Each Containment Spray System shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve (manual, power operated or automatic) in the flow path that is not locked, sealed, or otherwise secured in position, is in its correct position;

b. By verifying that on recirculation flow, each pump develops a differential pressure of greater than or equal to 205 psid when tested pursuant to Specification 4.0.5;

c. At least once per REFUELING INTERVAL by:

   1) Verifying that each automatic valve in the flow path actuates to its correct position on a Phase "B" Isolation test signal, and

   2) Verifying that each spray pump starts automatically on a Phase "B" Isolation test signal.

d. At least once per 10 years by performing an air or smoke flow test through each spray header and verifying each spray nozzle is unobstructed.

[illegible]

[illegible]

SURVEILLANCE REQUIREMENTS (Continued)

b. At least once per 31 days by:

1) Initiating flow through the HEPA Filter And Charcoal Adsorber System and verifying that either redundant set of booster and pressurization supply fans operate for at least 10 continuous hours with the heaters operating.

2) Verifying that each Ventilation System redundant fan is aligned to receive electrical power from a separate OPERABLE vital bus, and

3) Starting (unless already operating) each main supply fan, booster fan, and pressurization supply fan, and verifying that it operates for 1 hour.

c. At least once per REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 2100 cfm ± 10%;

2) Verifying a system flow rate of 2100 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

d. At least once per 18 months, or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3) after 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 1%;

SURVEILLANCE REQUIREMENTS (Continued)

e. At least once per REFUELING INTERVAL by:

   1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.5 inches Water Gauge while operating the system at a flow rate of 2100 cfm ± 10%;

   2) Verifying that on a Phase "A" Isolation test signal, the system automatically switches into the pressurization mode of operation with approximately 27% (determined by damper position) of the flow through the HEPA filters and charcoal adsorber banks;

   3) Verifying that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere during the pressurization mode of system operation; and

   4) Verifying that the heaters dissipate 5 ± 1 kW when tested in accordance with ANSI N510-1980.

f. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 or a DOP test aerosol while operating the system at a flow rate of 2100 cfm ± 10%; and

g. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon test gas while operating the system at a flow rate of 2100 cfm ± 10%.

3/4.7.6 AUXILIARY BUILDING SAFEGUARDS AIR FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.6.1 Two Auxiliary Building Safeguards Air Filtration System exhaust trains with one common HEPA filter and charcoal adsorber bank and at least two exhaust fans shall be OPERABLE.

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

ACTION:

a. With the HEPA filter and charcoal adsorber bank inoperable, restore the HEPA filter and charcoal adsorber bank to OPERABLE status within 24 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

b. With only one exhaust fan OPERABLE, restore at least two exhaust fans to OPERABLE status within 7 days or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.7.6.1 Each Auxiliary Building Safeguards Air Filtration System train shall be demonstrated OPERABLE:

a. At least once per 31 days by:

1) Initiating flow through the HEPA filter and charcoal adsorber bank and verifying that the train operates for at least 10 continuous hours with the heaters operating, and

2) Verifying that each exhaust fan is aligned to receive electrical power from a separate OPERABLE vital bus.

b. At least once per REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, by:

SURVEILLANCE REQUIREMENTS (Continued)

1) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 73,500 cfm ± 10%;

2) Verifying a system flow rate of 73,500 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. At least once per 18 months, or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3) after every 720 hours of charcoal adsorber operation, by verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 6%.

d. At least once per REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.7 inches Water Gauge while operating the system at a flow rate of 73,500 cfm ± 10%,

2) Verifying that flow is established through the HEPA filter and charcoal adsorber bank on a Safety Injection test signal, and

3) Verifying that the heaters dissipate 50 ± 5 kW when tested in accordance with ANSI N510-1980.

4) Verifying that leakage through the Auxiliary Building Safeguards Air Filtration System 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.

3/4.9.12 FUEL HANDLING BUILDING VENTILATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.9.12 Two Fuel Handling Building Ventilation Systems shall be OPERABLE.

APPLICABILITY: Whenever irradiated fuel is in the spent fuel pool.

ACTION:

a. With one Fuel Handling Building Ventilation System inoperable, fuel movement within the spent fuel pool or crane operation with loads over the spent fuel pool may proceed provided the OPERABLE Fuel Handling Building Ventilation System is capable of being powered from an OPERABLE emergency power source and is in operation and discharging through at least one train of HEPA filters and charcoal adsorbers.

b. With no Fuel Handling Building Ventilation System OPERABLE, suspend all operations involving movement of fuel within the spent fuel pool or crane operation with loads over the spent fuel pool until at least one Fuel Handling Building Ventilation System is restored to OPERABLE status.

c. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.9.12 The above required Fuel Handling Building Ventilation Systems shall be demonstrated OPERABLE:

a. At least once per 31 days by initiating flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes;

b. At least once per REFUELING INTERVAL or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system by:

   1) Visually verifying that, with the system operating at a flow rate of 35,750 cfm ± 10% and exhausting through the HEPA filters and charcoal adsorbers, the damper valve M-29 is closed;

   2) Verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% and uses the test procedures guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 35,750 cfm ± 10%;

[illegible] [illegible] [illegible] [illegible]

[illegible]

3) Verifying a system flow rate of 35,750 cfm ± 10% during system operation when tested in accordance with ANSI N510-1980.

c. At least once per 18 months or (1) after any structural maintenance on the charcoal adsorber housings, or (2) following painting, fire, or chemical release in any ventilation zone communicating with the system, or (3) after every 720 hours of charcoal adsorber operation by verifying within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978, for a methyl iodide penetration of less than 4.3%;

d. At least once per REFUELING INTERVAL by:

1) Verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 4.1 inches Water Gauge while operating the system at a flow rate of 35,750 cfm ± 10%,

2) Verifying that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks, and

3) Verifying that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch Water Gauge relative to the outside atmosphere during system operation.

e. After each complete or partial replacement of a HEPA filter bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a DOP test aerosol while operating the system at a flow rate of 35,750 cfm ± 10%; and

f. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1% in accordance with ANSI N510-1980 for a halogenated hydrocarbon test gas while operating the system at a flow rate of 35,750 cfm ± 10%.

ATTACHMENT D

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS FOR EACH PROPOSED TS CHANGE

CONTENTS

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS

ITEMS 1 AND 2
TECHNICAL SPECIFICATIONS
3/4.3.1
3/4.3.2

RESPONSE TIME TESTS

A. DESCRIPTION OF CHANGE

These Technical Specification (TS) changes would revise the following two response time testing surveillance requirements to change the surveillance frequency from at least once per 18 months to at least once per REFUELING INTERVAL (nominal 24 months, maximum 30 months).

Item	Technical Specification
1.	TS 3/4.3.1, "Reactor Trip System Instrumentation," TS 4.3.1.2
2.	TS 3/4.3.2, "Engineered Safety Features Actuation System Instrumentation," TS 4.3.2.2

The proposed changes are provided in the marked-up copies of TS pages 3/4 3-1 and 3/4 3-14 in Attachment B. Proposed new TS pages are provided in Attachment C.

B. BACKGROUND

The plant protection system is designed to automatically initiate a protective action whenever a condition monitored by the system reaches a preset level. The protective action may consist of a reactor trip system (RTS) and/or an engineered safety feature actuation system (ESFAS) actuation. In either case, the response of the protective function should be fast enough to limit the consequences of an event to acceptable levels, as verified by the accident analyses. There are various delays associated with each trip or actuation function, including delays in signal generation, processing, and final device actuation. The specific functions requiring response time testing are provided in TS Tables 3.3-2 (RTS) and 3.3-5 (ESFAS).

The TS provide definitions of RTS and ESFAS response time. For the RTS, each function's response time is the time interval from when the monitored parameter exceeds its trip setpoint at the channel sensor until loss of control rod stationary gripper voltage occurs. For the ESFAS, each function's response time is the time interval from when the monitored parameter exceeds its

actuation setpoint at the channel sensor until the engineered safety feature (ESF) equipment is capable of performing its safety function.

Response time testing is performed each outage, with individual components tested on a staggered test basis. The RTS and ESFAS components are currently required to be response time tested at a frequency of (18 x N), where N is the total number of channels or trains in a system. This results in train-related equipment, such as pumps, valves and the solid state protection system (SSPS), being tested once every 36 months (18 x 2 trains). Channel-related instrument loops are tested on a 36-month, 54-month or 72-month frequency, depending on the total number of instrument channels for a given parameter. Neutron detectors are specifically exempted from response time testing.

The proposed change will extend the testing frequency currently in the TS from once per 18 months to once per 24 months. For train-related components or systems, the maximum test interval will be extended from 36 months to 48 months. For instrument channels, the maximum test interval will be extended from 72 months to 96 months.

Because there is no way to test overall function response times at power without causing reactor trips and ESFAS actuations, they are tested during refueling outages.

C. SAFETY EVALUATION

Response time testing is completed each refueling outage using an overlapping series of tests. For example, for the RTS function of pressurizer pressure-low reactor trip, the separate tests include sensor (transmitter) response time, protection system signal processing time, SSPS actuation logic time, and reactor trip breaker opening time. The overall response time Surveillance Test Procedure (STP) I-33A, "Reactor Trip and ESF Response Time Test," coordinates and sums the results of the separate tests to obtain each function's response time.

The effect of extending the response time test interval may be evaluated from the presence of other operational tests, a review of the operating and surveillance history of the plant, and a review of industry experience.

Other Testing

Response time testing is only a small part of the surveillance and maintenance program in place to ensure the operability of plant equipment. Assurance of equipment operability is provided by many other tests:

- Channel sensors and the process protection system (Eagle 21) typically receive channel checks each operating shift, channel calibrations each refueling interval, and channel operational tests quarterly;

- The actuation logic for each protection train (SSPS) is tested every 62 days on a staggered frequency;
- Slave relay testing is performed on a quarterly or refueling interval;
- The reactor trip breakers are tested every 62 days in conjunction with the associated actuation logic train; and,
- Pumps, valves, diesel generators, and other actuation equipment are tested pursuant to the In-Service Testing (IST) Program and TS on either monthly, quarterly, cold shutdown, or refueling frequencies.

Operating History

A review of the operating history of the plant with respect to response time testing was completed. Many RTS and ESFAS components subject to response time testing are challenged when reactor trips or safety injections occur. The Diablo Canyon Power Plant (DCPP) program for post-trip review requires analysis of plant data to ensure that plant equipment functioned correctly. No failures to complete RTS or ESFAS actuations within the required response time were identified in a review of various plant records.

Surveillance History

Completed STP I-33A data sheets for the past five refueling outages on each unit were reviewed. All of the RTS and ESFAS times were within the TS acceptance criteria. Evaluation of the data by component type follows.

<u>Instrumentation sensors</u> are proposed to receive response time testing at 48-month, 72-month or 96-month intervals. As noted below in the industry experience section, pressure transmitters are not sensitive to the frequency of response time testing. A sample of DCPP surveillance test data was reviewed for undervoltage and underfrequency relays and resistance temperature devices (RTDs). The review indicated that no time dependence exists.

<u>Process protection system racks (Eagle 21)</u> currently receive response time testing each refueling cycle as an integral part of the computer-run automatic test sequence performed during the channel calibration process. In conjunction with the proposed extended refueling interval of 24 months, the required channel response time test frequencies for functions processed by the Eagle 21 racks are 72 or 96 months. Since these channels receive routine response time testing each outage during channel calibration, there is no impact on the protection system rack reliability from extending the response time test interval.

<u>Actuation logic and relay trains (SSPS)</u> are proposed to receive response time testing at 48-month intervals. The test measures the response time of the input relays, logic, and master relays. The electronic logic cards respond essentially

instantaneously. The staggered monthly actuation logic tests use a short duration (in microseconds) pulsed signal to verify logic functions. If a logic function were "slow," it would fail the test. No instances of "slow" logic have ever occurred at DCPP, and there are no industry reports of such failures. Therefore, the SSPS response time represents the time for the input and master relays to operate, as appropriate. A review of the relay data for a sample of the functions indicate that the data are stable and that no time dependence exists.

<u>Reactor trip breakers</u> are proposed to receive train-related response time testing at 48-month intervals. The breakers receive extensive preventive maintenance each refueling outage in accordance with the vendor's recommendations. This maintenance includes verification of response time. All of the breakers have recorded consistent response times in the past regardless of the duration of the test interval. Since the breakers receive routine response time testing during maintenance each outage, there is no impact on trip breaker reliability from extending the response time test interval.

<u>Actuation (slave) relays and actuation equipment</u> are proposed to receive train-related response time testing at 48-month intervals. The valves, sequencing timers and associated pumps and fans, and diesel generators are timed for other surveillance programs on more frequent schedules. The slave relays receive a documented qualitative assessment of adequate response time during each slave relay test. Therefore, there is no impact on actuation relays and equipment reliability from extending the response time test interval.

Maintenance History

There is no maintenance history associated with this TS surveillance, since STP I-33A consolidates RTS and ESFAS response time information from hundreds of plant components. All of these components are surveilled to meet operability requirements of other TS. In cases where those TS may be extended to refueling interval frequency, specific component performance is reviewed to support surveillance extension.

Industry Experience

Industry experience and generic NRC communications were reviewed for generic response time issues. Significant issues on reactor trip breaker response time, transmitter sensing lines, and transmitter snubbers have been evaluated and determined to be covered by existing DCPP programs.

The Electric Power Research Institute and the Westinghouse Owner's Group have documented that pressure sensor (transmitter) response time testing is of little value in identifying sensor failure. DCPP current instrument calibration and monitoring programs have proven effective in identifying failed sensors before

response time effects are seen. The NRC has reviewed and approved the methodology presented in WCAP-13632, Revision 2, "Elimination of Periodic Protection Channel Response Time Tests," covering the reduction of pressure sensor response time testing.

Summary

The surveillance and operating history and evaluation of other surveillance tests performed at DCPP for components subject to response time testing support the conclusion that the effect on safety of extending the surveillance intervals is small. No response time problems related to equipment performance have occurred. No time-dependent failure history is evident for any component.

PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS change.

D. NO SIGNIFICANT HAZARDS EVALUATION

The proposed changes to TS 4.3.1.2 and 4.3.2.2 extend the frequency for response time surveillances from at least once per 18 months, to at least once per refueling interval (i.e., 24 months nominal, 30 months maximum).

The following evaluation is the basis for the no significant hazards consideration determination.

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

   The increased surveillance interval does not alter the intent or method by which response time testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated. The surveillance and operating history of the specified components indicates they will continue to perform satisfactorily with a longer surveillance interval. There is no known mechanism that would significantly degrade the performance of this equipment during normal plant operation over the proposed maximum surveillance interval.

   Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The surveillance history indicates that the specified components will continue to effectively perform their design function for longer operating cycles. Additionally, the increased surveillance interval does not result in any

physical modifications, affect safety function performance, or alter the intent or method by which surveillance tests are performed.

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

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

Evaluation of historical surveillance data indicates there have been no problems regarding response time with the specified components. There are no indications that potential problems would be cycle-length dependent. There is no safety analysis impact since this change will have no effect on any safety limit, protection system setpoint, or limiting condition of operation, and there is no hardware change that would impact existing safety analysis acceptance criteria.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS

ITEMS 3, 4, 5
TECHNICAL SPECIFICATIONS
3/4.3.2
3/4.6.2

CONTAINMENT SPRAY SYSTEM

A. DESCRIPTION OF CHANGE

These Technical Specification (TS) changes would revise three containment spray (CS) system surveillance requirements to change the surveillance frequency from at least once per 18 months to at least once per REFUELING INTERVAL (nominal 24 months, maximum 30 months).

<u>Item</u> <u>Technical Specification</u>

3. TS 3/4.3.2, "Engineered Safety Features Actuation System Instrumentation," Table 4.3-2, Functional Unit 2.a, regarding manual CS initiation. Revise frequency from R, once each 18 months, to R24, at least once each 24 months.

4. TS 3/4.6.2, "Containment Spray System," TS 4.6.2.1c.1), regarding automatic valve actuation. Revise frequency from once each 18 months to once each REFUELING INTERVAL.

5. TS 3/4.6.2, "Containment Spray System," TS 4.6.2.1c.2), regarding automatic spray pump actuation. Revise frequency from once each 18 months to once each REFUELING INTERVAL.

These TS are also the subject of previously submitted License Amendment Request (LAR) 96-07, "Containment Spray Initiation Signals," (PG&E Letter DCL 96-089, dated May 9, 1996). LAR 96-07 proposed to revise the descriptions of the initiating signal for operation of CS components. These changes provide consistency, clarify CS initiation signals, and conform to the description provided in NUREG-1431, Revision 1. LAR 96-07 does not add or delete any TS required testing.

The proposed changes for Items 3, 4, and 5 are provided in the marked-up copies of TS pages 3/4 3-32 and 3/4 6-11 in Attachment B. The proposed new TS pages are provided in Attachment C.

B. BACKGROUND

The functions of the CS system are to remove heat and fission products from the containment atmosphere and to maintain the containment sump pH within analysis limits following an accident. The CS system is composed of two redundant trains of pumps and valves. Each train contains one spray pump able to take suction from the refueling water storage tank and spray additive tank, and discharge to its spray header ring in containment. Each pump has an automatic discharge valve which must open to allow spray solution to reach containment. The CS system remains in standby status during normal plant operation.

The CS pumps start and the automatic discharge valves open upon receipt of a Phase B isolation signal when a coincident safety injection (SI) signal is present. The required SI signal interlock is generated by any manual or automatic SI actuation and is required for either automatic or manual actuation of the CS system.

Containment Phase B isolation signals are generated for two purposes: CS initiation and essential process line isolation. An SI interlock signal is not required for the process isolation. Automatic Phase B isolation signals are generated when two out of four containment pressure channels exceed 22 psig. The SI signal on containment high pressure is generated when two out of three containment pressure channels exceed 3 psig. Manual Phase B signals are generated using two control board switches. The automatic and manual initiation paths for CS share the same actuation circuitry.

C. SAFETY EVALUATION

Automatic and manual actuations of the CS components are verified on an 18-month frequency, at a minimum. Manual actuation is verified each refueling outage during functional testing of the SI and Phase B actuation and reset switches. Automatic actuation of both the CS and SI slave relays associated with the spray pumps and discharge valves is currently verified during quarterly slave relay testing.

Other Tests

Assurance of system operability is provided by many other surveillance tests. Actuation of the complete CS initiation function is verified during integrated system safeguards testing each refueling outage. The integrated test performed to satisfy TS 4.8.1.1.1 and 4.8.1.1.2 provides the most realistic test of CS initiation. The test requires initiation of manual SI and manual Phase B signals and verifies that all of the diesel generators start and ESF pumps load onto the emergency busses as designed. For the integrated system test, the CS pumps and discharge valves are made available with their manual valves to

the containment spray rings closed to prevent inadvertently spraying containment. After the manual signals are initiated, automatic pump sequencing and automatic discharge valve opening are verified.

The automatic actuations of the CS pumps and discharge valves are currently tested quarterly to meet the requirements of TS 4.3.2.1 on slave relay testing. PG&E submitted LAR 94-11, "Revision of Technical Specification 3/4.3.2 - Slave Relay Test Frequency Relaxation," (PG&E Letter DCL-94-254, dated November 14, 1994), to extend the surveillance interval for slave relay testing from quarterly to refueling frequency. Upon issuance of the amendments, actuations associated with this surveillance may change to an extended frequency.

Assurance of pump operability is provided by TS 4.6.2.1.b. This TS requires a pump test pursuant to TS 4.0.5 on a quarterly frequency. The In-Service Testing (IST) Program ensures the continued availability of the pumps by verifying their mechanical operability.

Assurance of CS discharge valve operability is provided by several other TS. TS 4.6.3.1 requires that each containment isolation valve be demonstrated operable prior to returning it to service after maintenance work. TS 4.6.3.3 requires that the isolation time for each containment isolation valve shall be determined within its limit when tested pursuant to TS 4.0.5. The IST Program ensures the continued availability of the automatic actuation valves by verifying their mechanical operability. The discharge valves are tested quarterly.

Operating History

A review of the operating history for the CS pumps and valves was completed. No actual Phase B signals have been generated at Diablo Canyon Power Plant (DCPP) during normal plant operations. There have been no instances where the CS system would have been unable to meet its specified functions.

Surveillance History

TS 4.3.2.1, Table 4.3-2, Functional Unit 2.a) requires a trip actuating device operational test of the two channels of CS manual initiation. The TS is verified by actuating the two red handles for Phase B on the control board and verifying the functioning of the master relays in the solid state protection system. The individual Phase B and CS reset switches are also tested. Verification of the functioning of the SI interlock signal is provided during the integrated system test described above.

Twenty-two refueling frequency functional surveillance tests were reviewed covering both channels of manual CS initiation for both units. The review

confirmed that there were no failures in meeting the TS in the last six refueling outages on each unit.

Eight integrated system tests were reviewed covering the manual initiation of both trains of CS using the manual SI and Phase B switches. The review confirmed there were no failures in meeting the TS in the past four refueling outages on each unit.

TS 4.6.2.1c.1) verifies that each automatic valve in the CS flowpath actuates to its correct position on a Phase B isolation test signal. The valves surveilled for this TS are 9001A and 9001B, the two CS pump discharge valves on each unit. The TS is verified by actuating the slave relays associated with the discharge valves using a simulated Phase B signal and verifying that the valves open. The SI signal interlock is jumpered in during the quarterly test to allow the valves to open.

Sixty-four quarterly slave relay surveillance tests were reviewed covering the CS discharge valves 9001A and B for both units. The review confirmed that there were no failures or problems in satisfying the TS with any automatic actuations of the discharge valves in the last six years on each unit.

TS 4.6.2.1c.2) verifies that each CS pump starts automatically on a Phase B test signal. The TS is verified by actuating the slave relays associated with the CS pumps using a simulated Phase B signal and verifying that the pumps start. The SI signal interlock is jumpered in during the quarterly test to allow the pump to start.

Sixty-four quarterly slave relay surveillance tests were reviewed covering the spray pumps for both units. The review confirmed that there were no failures in meeting the TS with any automatic actuations of the pumps in the last six years. Additionally, the integrated system tests verified the actuation of the pumps on a Phase B signal coincident with an SI signal.

Maintenance History

A review of the maintenance history for the last six years (beginning in January 1990) for each of the pumps, valves, and manual initiation switches was performed. No failures were recorded against any of these components which would have prevented them from performing their automatic actuation function.

The CS pumps and automatic discharge valves may be maintained while the unit is at power. The manual initiation switches are generally limited to maintenance during shutdown periods. The pumps and valves are in the scope of the Reliability-Centered Maintenance Program.

Because the CS system is a standby system, and would only be actuated during a severe accident, it receives no use during power operations other than brief,

required testing. Therefore, there are no significant time related degradation mechanisms related to extending the surveillance interval.

Industry Experience

Industry experience and generic NRC communications were reviewed. Issues concerning safety-related valve operability under accident conditions have been addressed and appropriate testing, modifications, and programs put into place.

Summary

The operating, surveillance, and maintenance history of the CS system, the presence of other operational tests, and a review of industry experience support the conclusion that the effect on safety of extending the surveillance interval is small. There are no recurring surveillance or maintenance problems. The preventive maintenance programs for the pumps and valves have been reviewed and determined to support extension of the maintenance intervals.

PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS change.

D. NO SIGNIFICANT HAZARDS EVALUATION

The proposed changes to TS 4.3.2.1, 4.6.2.1.c.1), and 4.6.2.1.c.2) extend the surveillance interval for testing the automatic actuations of the CS manual initiation circuitry, pumps, and discharge valves from at least once per 18 months to at least once per refueling interval (i.e., 24 months nominal, 30 months maximum).

The following evaluation is the basis for the no significant hazards consideration determination.

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

   The CS system is not associated with the initiation of any previously evaluated accident. The increased surveillance interval does not alter the intent or method by which the refueling tests are conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated. The surveillance, maintenance, and operating history of the CS system indicate that it will continue to perform satisfactorily with a longer surveillance interval. No identified mechanism would significantly degrade system performance during normal operations.

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

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

   The CS system is not associated with the initiation of any previously evaluated accident. The surveillance and maintenance history indicates that the manual and automatic actuation circuits and components of the CS system will continue to effectively perform their design function for longer operating cycles. The increased surveillance interval does not result in any physical modifications, affect safety function performance, or alter the intent or method by which surveillance tests are performed.

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

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

   Evaluation of historical surveillance and maintenance data indicate there have been no significant problems with the manual and automatic actuation circuits and components of the CS system. There are no indications that potential problems would be cycle-length dependent. There is no safety analysis impact since this change will have no effect on any safety limit, protection system setpoint, or limiting condition of operation, and there is no hardware change that would impact existing safety analysis acceptance criteria.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS

ITEMS 6, 7, 8, 9, 10, 11, 12, 13
TECHNICAL SPECIFICATION
3/4.7.5

CONTROL ROOM VENTILATION SYSTEM

A. DESCRIPTION OF CHANGE

These Technical Specification (TS) changes would revise the frequency of certain surveillance requirements provided in TS 3/4.7.5, "Control Room Ventilation System," from at least once per 18 months to at least once per REFUELING INTERVAL (nominal 24 months, maximum 30 months). Additionally, administrative changes are proposed to maintain consistency for TS items which are not proposed for surveillance extension.

<u>Item</u> <u>Technical Specification</u>

6. TS 4.7.5.1c.1) verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1 percent and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 2100 cfm ± 10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.

7. TS 4.7.5.1c.2) regarding charcoal adsorber carbon testing on an 18 month frequency and under certain conditions, would be deleted. All control room ventilation system carbon tests would be combined into TS 4.7.5.1d.

8. TS 4.7.5.1c.3) verifies that the system flow rate is 2100 cfm ± 10 percent during system operation when tested in accordance with ANSI N510-1980. The surveillance frequency would be extended to REFUELING INTERVAL.

9. TS 4.7.5.1d. regarding carbon sampling would be expanded to include the 18-month frequency and conditions currently associated with TS 4.7.5.1c.2), above.

10. TS 4.7.5.1e.1) verifies that the pressure drop across the combined high efficiency particulate air (HEPA) filters and charcoal adsorber

banks is less than 3.5 inches water gauge while operating the system at a flow rate of 2100 cfm ± 10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.

11. TS 4.7.5.1e.2) verifies that on a Phase A Isolation test signal, the system automatically switches into the pressurization mode of operation with approximately 27 percent (determined by damper position) of the flow through the HEPA filters and charcoal adsorber banks. The surveillance frequency would be extended to REFUELING INTERVAL.

12. TS 4.7.5.1e.3) verifies that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere during the pressurization mode of system operation. The surveillance frequency would be extended to REFUELING INTERVAL.

13. TS 4.7.5.1e.4) verifies that the heaters dissipate 5 ± 1 kW when tested in accordance with ANSI N510-1980. The surveillance frequency would be extended to REFUELING INTERVAL.

The control room ventilation system (CRVS) TS is also the subject of previously submitted License Amendment Request (LAR) 96-06. The relationship between the LARs is discussed in Attachment A.

The proposed changes are provided in the marked-up copies of TS pages 3/4 7-14 and 3/4 7-15 in Attachment B. The proposed new TS pages are provided in Attachment C.

B. BACKGROUND

Diablo Canyon Power Plant (DCPP) Units 1 and 2 share a common control room, and each unit maintains its own adjoining plant process computer room. Each unit maintains separate control room ventilation and pressurization systems and plant process computer room air conditioning systems.

The CRVS for each unit has two separate trains consisting of a filter booster fan, a main supply fan, and an air cooling assembly. Additionally, each unit has one passive HEPA filter and charcoal adsorber assembly. The basis for common use of the filter/adsorber assembly is that the assembly operation is passive. Each unit's CRVS also provides a supplementary cooling function for the unit's computer room, although the plant process computer room air conditioning system for each unit is the primary source of cooling. The control room

pressurization system (CRPS) for each unit has two separate trains consisting of a pressurization fan and associated inlet and outlet dampers. Depending upon the plant conditions, different configurations of fans and dampers are used.

The CRVS and CRPS are either operating or on standby during normal and accident conditions. Actuation of the CRVS and CRPS to the accident alignment (pressurization mode) occurs on either receipt of a containment Phase A isolation signal or high radiation detected at the CRVS inlet.

The major safety functions of these systems are: (1) to pressurize the control room with makeup air from a remote source to ensure that the control room will remain habitable for operations personnel during and following credible accident conditions resulting in radiation release; and (2) to maintain the control room ambient air temperature within limits that will not result in the long term degradation of the contained instrumentation.

C. SAFETY EVALUATION

Administrative Changes

The administrative changes propose to delete TS 4.7.5.1c.2) and combine the various intervals and conditions when carbon testing is required into one surveillance requirement, TS 4.7.5.1d. No changes were made to the testing intervals, conditional surveillances, or testing methods. The changes provide uniformity across the TS associated with carbon testing. There is no change in the operation or testing of the CRVS, or the ability of the system to perform its safety function.

In January 1994, DCPP changed carbon testing methodologies. The first carbon samples analyzed under the ASTM D 3803-1989 standard provided results which were much more conservative than those obtained previously, resulting in failed charcoal adsorber banks, which were replaced. DCPP has not had sufficient operating experience under the new standard to provide baseline information on the rate of carbon degradation. Therefore, TS 4.7.5.1c.2) is not proposed for surveillance interval extension at this time.

Surveillance Extension Changes

Capacity and performance verification of both units' CRVS/CRPS is performed on an 18-month frequency using several different tests. Automatic actuation of the system to pressurization mode is tested

quarterly, with damper automatic alignment verification performed on a refueling frequency.

Automatic actuation is currently tested quarterly to meet TS 4.3.2 slave relay testing requirements. PG&E submitted LAR 94-11, "Revision of Technical Specification 3/4.3.2 - Slave Relay Test Frequency Relaxation," (PG&E Letter DCL-94-254, dated November 14, 1994), to extend the surveillance interval for slave relay testing from quarterly to refueling frequency. Upon issuance of the amendments, testing associated with this surveillance may change to refueling frequency.

Assurance of CRVS/CRPS operability is provided by several other TS 4.7.5.1 surveillance requirements. Acceptable control room temperature is verified every 12 hours. The filter and charcoal adsorber system, main supply fans, booster and pressurization supply fans and heaters are operated at least once each 31 days. During the test, correct damper alignment is verified and total charcoal adsorber bed operation time is verified to be less than 720 hours. Additional system data is recorded to trend the differential pressure across the fan filters to aid in determining when filter replacement is necessary.

Further assurance of automatic damper actuation operability is provided by the automatic actuation logic testing of the SSPS performed on a staggered monthly frequency per TS 4.3.2.1. This testing ensures that a Phase A signal will be generated when required.

Operating History

A review of the operating history of the CRVS and CRPS was completed. None of the equipment failed to operate when an actual Phase A signal was received. Most of CRVS equipment is in service on a regular basis to provide normal heating and air conditioning functions. The regular system use provides opportunities to detect equipment problems due to normal wear.

The CRVS has been the subject of several License Event Reports (LERs) during the life of the plant. Most of the reports were due to inadvertent automatic actuations of the system to the accident mode (pressurization), a conservative action. Review of the reports indicated that the only LER due to equipment wear was LER 1-87-009-01 in which the CRVS was inoperable due to control room door latch failure. As a corrective action, the doors were reversed and reinstalled such that control room pressure will seat the door against the door frame. The problem has not recurred.

Surveillance History

Surveillance test results were reviewed for a minimum of the last four refueling cycles (approximately six years) for both units.

TS 4.7.5.1c.1) verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1 percent and the system flow rate is 2100 cfm ± 10 percent. A review of 12 tests performed at an 18-month frequency identified no failures or problems meeting this TS.

TS 4.7.5.1c.3) verifies that each train's system flow rate is 2100 cfm ± 10 percent when tested in accordance with ANSI N510-1980. A review of 12 tests performed at an 18-month frequency identified three test anomalies. One affected the ability of the system to deliver the TS required air flow rate. The review confirmed that there were no problems in satisfying the TS after 1990.

During the Unit 1 test in September 1986, the air flow for the FU-39/S-40 filter unit and fan combination was below the TS minimum. The ducts were cleaned and the retest passed.

During the Unit 1 test in October 1989, the air flow for the FU-39/S-40 filter unit and fan combination was below the TS minimum. After the ductwork air registers were cleaned, the test was repeated and the flow was above the TS minimum. Subsequent investigation identified that the test gauge (anemometer) was out of calibration; consequently, the original test flows were within the TS requirements. Additionally, cleaning activities were added to the preventive maintenance program to remove dust accumulations which may reduce air flow.

During the Unit 2 test in January 1990, the motors for fan S-41 and its associated damper MOD-13 did not start on the first attempt. When the test was repeated both operated correctly. Auxiliary relay RX-34AX was suspected but the original problem could not be reproduced. The relay was replaced, and the problem has not recurred. The actual system air flow was within TS requirements.

TS 4.7.5.1e.1) verifies that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.5 inches water gauge while operating the system at a flow rate of 2100 cfm ± 10 percent. A review of 12 tests performed at an 18-month frequency identified no failures or problems meeting this TS.

TS 4.7.5.1e.2) verifies that on a Phase A Isolation test signal, the system automatically switches into the pressurization mode of operation with approximately 27 percent (determined by damper position) of the flow through the HEPA filters and charcoal adsorber banks. A review of 47 slave relay tests performed on a quarterly frequency since November 1989 (a minimum of 23 tests for each of the slave relays associated with the CRVS) identified one problem.

As discussed under TS 4.7.5.1.c.3), the Unit 2 CRVS experienced a suspected problem with an auxiliary relay actuated off of the slave relays during 1990 testing. The relay was replaced and the problem has not recurred during subsequent testing. No problems were experienced during any Unit 1 testing.

TS 4.7.5.1e.3) verifies that the system maintains the control room at a positive pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere during the pressurization mode of system operation. Twelve refueling frequency CRVS capacity tests, six for each unit, were reviewed. The review confirmed that there were no problems in satisfying the TS.

TS 4.7.5.1e.4) verifies that the heaters dissipate 5 ± 1 kW when tested in accordance with ANSI N510-1980. A review of 30 control room heater capacity tests performed at an 18-month frequency identified no failures or problems meeting this TS.

Maintenance History

A review of the maintenance history for six years (beginning in January 1990) for each of the critical system components was performed. Maintenance on most of these components may be performed while the unit is at power. All of the components are part of the Reliability-Centered Maintenance Program.

Since January 1990, the following components experienced significant corrective or preventive maintenance activities associated with conditions where the system could have failed to perform its automatic safety function. The failures have not been of a recurring nature, and the majority have been random failures of single components. There is no historical evidence to indicate a degradation in performance that would render the CRVS unable to perform its intended safety function.

Booster Fans - As noted in the Surveillance History section, in 1990 an auxiliary relay was replaced in the S-41 fan circuitry. Since the replacement of this relay, there have been no significant maintenance

activities on the four booster fans affecting their ability to perform their automatic safety function.

Dampers - Four significant maintenance related events have occurred involving dampers. However, the four events are unrelated and have not recurred. Information on these events is provided below:

In 1992, Unit 1 damper VAC-1-M-4 (supplying recirculation air to the HEPA filter unit) failed to close during monthly testing. The air supply solenoid valve had failed and was replaced. Because no similar problem has occurred before or since, this is considered to be a random failure.

In 1992, the Unit 2 control transformer for damper VAC-2-MOD-8 failed when a short circuit condition occurred. The transformer was replaced satisfactorily. Industry experience reports were checked and no similar failures were found. Because no similar problem has occurred before or since, this is considered to be a random failure.

In December 1992, Unit 1 damper VAC-1-MOD-13 was found to have a broken drive gear and was inoperable. When similar dampers were inspected for this problem in 1993, several other dampers were found to have cracked, but still operable, drive gears. The gears were replaced and the linkages were adjusted to prevent the drive gear from being forced against the stop. Routine damper preventive maintenance practices were revised to provide additional detail on gear and linkage setup. The routine inspections performed since then have found only minor indications, and are currently performed at an annual frequency.

In 1994, Unit 1 damper VAC-1-MOD-1C (discharge damper for pressurization fan S-98) failed to move during the monthly test. After manually positioning the damper once, the damper began to operate correctly again. No similar problem has occurred, and this is considered to be a random failure.

Industry Experience

Industry experience and generic NRC communications were reviewed. Issues concerning control room ventilation and habitability have been addressed and appropriate testing, modifications, and programs put in place. As noted above, issues concerning carbon testing have been addressed. However, since insufficient performance data is available using the revised test methodology, DCPP is not requesting extension of the carbon surveillance tests at this time.

Summary

The surveillance, maintenance, and operating history of the CRVS/CRPS supports the conclusion that the effect on safety of extending the surveillance interval is small. There are no recurring surveillance or maintenance problems, and other, more frequent surveillance tests provide assurance of system operability. The preventive maintenance programs for the major dampers, fans, filters, and heaters of this system have been reviewed and determined to support extension of the surveillance intervals.

PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS changes.

D. NO SIGNIFICANT HAZARDS EVALUATION

The proposed changes to TS 4.7.5.1c.1), 4.7.5.1c.3), 4.7.5.1e.1), 4.7.5.1e.2), 4.7.5.1e.3), and 4.7.5.1e.4) extend the surveillance interval for testing control room ventilation systems from at least once per 18 months to at least once per refueling interval (i.e., 24 months nominal, 30 months maximum).

The administrative changes to combine TS 4.7.5.1c.2) and 4.7.5.1d on charcoal adsorber testing make no change in any frequency or testing requirement of either of the two TS.

The following evaluation is the basis for the no significant hazards consideration determination.

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

   The CRVS/CRPS is not associated with the initiation of any previously evaluated accident. The increased surveillance interval does not alter the intent or method by which ventilation system testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated. The surveillance, maintenance, and operating history of the CRVS/CRPS indicates that they will continue to perform satisfactorily with a longer surveillance interval. There is no known mechanism that would significantly degrade the performance of this equipment during normal plant operation over the proposed maximum surveillance interval.

   The administrative change regarding conditional and periodic charcoal adsorber sample testing does not alter the frequency, intent, or method by which ventilation system testing is conducted, does not

alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The CRVS/CRPS is not associated with the initiation of any accident. The surveillance and maintenance history indicates that the CRVS/CRPS will continue to effectively perform its design function for longer operating cycles. Additionally, the increased surveillance interval does not result in any physical modifications, affect safety function performance, or alter the intent or method by which surveillance tests are performed.

   The administrative change regarding carbon testing does not result in any physical modifications, affect safety function performance, or alter the frequency, intent, or method by which surveillance tests are performed.

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

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

   Evaluation of historical surveillance and maintenance data indicate there have been few problems with the CRVS/CRPS. There are no indications that potential problems would be cycle-length dependent. There is no safety analysis impact since this change will have no effect on any safety limit, protection system setpoint, or limiting condition of operation, and there is no hardware change that would impact existing safety analysis acceptance criteria.

   The administrative change regarding combination of the carbon testing requirements does not result in any physical modifications, affect safety function performance, or alter the frequency, intent, or method by which surveillance tests are performed.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS

ITEMS 14, 15, 16, 17, 18, 19, 20, 21
TECHNICAL SPECIFICATION
3/4.7.6

AUXILIARY BUILDING SAFEGUARDS AIR FILTRATION SYSTEM

A. DESCRIPTION OF CHANGE

These Technical Specification (TS) changes would revise the frequency of certain surveillance requirements provided in TS 3/4.7.6, "Auxiliary Building Safeguards Air Filtration System," from at least once per 18 months to at least once per REFUELING INTERVAL (nominal 24 months, maximum 30 months). Additionally, administrative changes are proposed to maintain consistency for TS items which are not proposed for surveillance extension.

<u>Item</u> <u>Technical Specification</u>

14. TS 4.7.6.1b.1) verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1 percent and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 73,500 cfm ± 10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.

15. TS 4.7.6.1b.2), regarding charcoal adsorber carbon testing on an 18-month frequency and on certain conditions, would be deleted. All auxiliary building carbon tests would be combined into TS 4.7.6.1.c.

16. TS 4.7.6.1b.3) verifies that the system flow rate is 73,500 cfm ± 10 percent during system operation when tested in accordance with ANSI N510-1980. The surveillance frequency would be extended to REFUELING INTERVAL.

17. TS 4.7.6.1c. regarding carbon sampling would be expanded to include the 18-month frequency and conditions currently associated with TS 4.7.6.1.b.2), above.

18. TS 4.7.6.1d.1) verifies that the pressure drop across the combined high efficiency particulate air (HEPA) filters and charcoal adsorber banks is less than 3.7 inches water gauge while operating the

system at a flow rate of 73,500 cfm ± 10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.

19. TS 4.7.6.1d.2) verifies that flow is established through the HEPA filters and charcoal adsorber banks on a safety injection (SI) test signal. The surveillance frequency would be extended to REFUELING INTERVAL.

20. TS 4.7.6.1d.3) verifies that the heaters dissipate 50 ± 5 kW when tested in accordance with ANSI N510-1980. The surveillance frequency would be extended to REFUELING INTERVAL.

21. TS 4.7.6.1d.4) verifies that leakage through dampers M-2A and M-2B 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 surveillance frequency would be extended to REFUELING INTERVAL.

The auxiliary building ventilation system (ABVS) TS is also the subject of previously submitted License Amendment Request (LAR) 96-06. The relationship between the LARs is discussed in Attachment A.

The proposed changes are provided in the marked-up copies of TS pages 3/4 7-16 and 3/4 7-17 in Attachment B. The proposed new TS pages are provided in Attachment C.

B. BACKGROUND

The ABVS for each Diablo Canyon Power Plant (DCPP) unit supplies filtered outside air to various locations in the auxiliary building. The ABVS consists of ductwork, dampers, filter banks, and two redundant sets of supply and exhaust fans. Exhaust ventilation is filtered through roughing and HEPA filter banks, monitored, and discharged via the plant vent. An additional full capacity safeguards filter train consisting of roughing and HEPA filters, an electric preheater, and a charcoal adsorber bank, is provided for conditions where safeguards filtration is required.

The ABVS normally has one supply and one exhaust fan running, with the discharge routed through roughing and HEPA filters and the safeguards filter train isolated. On receiving an SI signal, the ABVS dampers automatically realign to the safeguards filtration mode so that after a loss of coolant accident, potential airborne materials released from the emergency core cooling system would be routed through the safeguards filter train.

The ABVS has two major safety functions. First, the system provides ventilation and cooling to support safety-related equipment required to be operable during and after an accident. Second, the system provides significant reductions in the amounts of airborne radioactive materials that could be released to atmosphere after an accident.

C. SAFETY EVALUATION

Administrative Changes

The administrative changes propose to delete TS 4.7.6.1b.2) and combine the various intervals and conditions when carbon testing is required into one surveillance requirement, TS 4.7.6.1c. No changes were made to the testing intervals, conditional surveillances, or testing methods. The changes provide uniformity across the TS associated with carbon testing. There is no change in the operation or testing of the ABVS or the ability of the system to perform its safety function.

In January 1994, DCPP changed carbon testing methodologies. The first carbon samples analyzed under the ASTM D 3803-1989 standard provided results which were much more conservative than those obtained previously, resulting in failed charcoal adsorber banks, which were replaced. DCPP has not had sufficient operating experience under the new standard to provide baseline information on the rate of carbon degradation. Therefore, TS 4.7.6.1b.2) is not proposed for surveillance interval extension at this time.

Surveillance Extension Changes

Capacity and performance verification of the ABVS is performed on an 18-month frequency. Surveillance testing is usually scheduled for performance shortly before each unit's refueling outage. However, testing may be performed at any time during the fuel cycle if necessary.

Automatic actuation to the safeguards filtration mode is currently tested quarterly to meet TS 4.3.2 slave relay testing requirements. PG&E submitted LAR 94-11, "Revision of Technical Specification 3/4.3.2 - Slave Relay Test Frequency Relaxation," (PG&E Letter DCL-94-254, dated November 14, 1994), to extend the surveillance interval for slave relay testing from quarterly to refueling frequency. Upon issuance of the amendments, testing associated with this surveillance may change to refueling frequency.

Assurance of auxiliary building operability is provided by the surveillance test performed at least once each 31 days for TS 4.7.6.1a. This TS requires initiating flow through the HEPA filter and charcoal adsorber

bank for at least 10 continuous hours with the heaters operating. During the test, correct damper alignment is verified and total charcoal adsorber bed operation time is verified to be less than 720 hours. Additional system data is recorded to trend the differential pressure across the fan filters to aid in determining when filter replacement is necessary.

Further assurance of automatic damper actuation operability is provided by the automatic actuation logic testing performed on a staggered monthly frequency per TS 4.3.2.1. This testing ensures that an SI signal will be generated when required.

Operating History

A review of the operating history of the ABVS was completed. None of the equipment has failed to operate when actual SI signals were received. The supply and exhaust fans are in service on a regular basis to satisfy normal ventilation requirements. The regular system use provides opportunities to detect equipment problems due to normal wear.

The ABVS has been the subject of several License Event Reports (LERs) during the life of the plant. Most of the reports were due to inadvertent automatic actuations of the system to the accident mode (safeguards filtration through the charcoal banks), a conservative action. Seven LERs were associated with entries into TS 3.0.3 when both ventilation trains were briefly unavailable for various reasons. All of the events were terminated by successfully restarting a ventilation train within one hour. None of the LERs were related to refueling frequency surveillance testing. The most recent event was three years ago, indicating that corrective actions have been successful. A brief description of the events follows:

- LER 93-002-00 was associated with a personnel error when a manual damper for the opposite train was closed during maintenance on a ventilation train. Additional detail is now provided in work instructions to prevent similar errors.

- LER 1-92-012-01 was associated with a common mode failure of both trains from a single failure of a diode in the system control panel. A control circuit review was performed and a design change was implemented to eliminate the common mode failure mechanism.

- LER 92-011-00 and LER 2-87-018-00 were associated with fan thermal overload trips due to restarting a fan too soon during monthly surveillance testing. Additional procedural guidance and operator training have prevented recurrence of this problem.

- LER 88-022-01 and LER 87-028-00 were associated with inadvertent exhaust fan shutdown caused by damper response characteristics when changes in system alignment occurred. The damper response setup was changed to provide smoother response and the problem has not recurred.

- LER 2-87-020-01 was associated with inadvertent supply fan shutdown when the other supply fan was secured. This event was caused by inadequate flow switch design along with failure of a backdraft damper to close. The flow switches for all supply and exhaust fans were relocated by 1990 to prevent fan shutdown on transients, and the problem has not recurred. The backdraft dampers are discussed further in the Maintenance History section.

Surveillance History

Surveillance test results were reviewed for at least the last five refueling outages on each unit for those tests performed on an 18-month frequency. Automatic actuation test results (performed quarterly) were reviewed for the last three years.

<u>TS 4.7.6.1b.1)</u> verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than one percent and the system flow rate is 73,500 cfm ± 10 percent. A review of 14 tests performed at an 18-month frequency identified no failures or problems meeting this TS.

<u>TS 4.7.6.1b.3)</u> verifies that each train's system flow rate is 73,500 cfm ± 10 percent when tested in accordance with ANSI N510-1980. A review of 16 tests performed at an 18-month frequency identified one test failure.

In 1991, Unit 1 exhaust fan E-2 calculated air flow was below the TS minimum. After the ductwork air registers and flow monitors were cleaned, the test was repeated and the flow was acceptable. To prevent recurrence, cleaning activities were added to the preventive maintenance program to remove dust accumulations which may reduce air flow. Additionally, since the flow monitors provide obstructions in the ductwork and are not required for testing or operation of the system, they are being removed. No further failures in meeting air flow requirements have occurred.

<u>TS 4.7.6.1.d1)</u> verifies that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 3.7 inches water gauge while operating the system at a flow rate of 73,500 cfm ± 10 percent. A review of 13 tests performed at an 18-month frequency identified no failures or problems meeting this TS.

TS 4.7.6.1.d2) verifies that flow is established through the HEPA filter and charcoal bank on an SI test signal. A review of 97 slave relay tests performed on a quarterly frequency since November 1989 (a minimum of 22 tests for each of the slave relays associated with the ABVS) identified no failures or problems meeting this TS.

TS 4.7.6.1.d3) verifies that the heaters dissipate 50 ± 5 kW. A review of 9 tests performed at an 18-month frequency identified no failures or problems meeting this TS.

TS 4.7.6.1.d4) verifies that leakage through dampers M-2A and M-2B is less than or equal to 5 cfm. A review of 11 tests performed at an 18-month frequency identified four failures.

In October 1989 (Unit 1 damper M-2A), March 1990 (Unit 2 damper M-2B), October 1991 (Unit 2 damper M-2A), and October 1992 (Unit 1 dampers M-2A and M-2B), minor leakage was indicated during bubble testing. The dampers were adjusted and their seals lubricated. The TS originally required no detectable leakage using a bubble test, but was revised in 1993 by License Amendments 80 and 79 to allow leakage of 5 cfm. The M-2 dampers are 72-inch diameter butterfly valves, and zero leakage was determined to be overly conservative. No further problems meeting leakage requirements have occurred since the TS was changed.

Maintenance History

A review of the maintenance history for six years (beginning in January 1990) for the critical system components was performed. Maintenance on these components may be performed while the unit is at power. All of the components are part of the Reliability-Centered Maintenance Program. Most of the components receive preventive maintenance at frequencies unrelated to refueling intervals.

Since January 1990, the following components experienced significant corrective or preventive maintenance activities associated with conditions where the system could have failed to perform its automatic safety function. The majority of the components have experienced random failures of single components. However, historical evidence does not indicate that performance would be degraded if the surveillance interval were extended to 30 months.

Ventilation Control Panels The ventilation system control panels POV-1 and POV-2 for each unit provide system control and diagnostics in the main control room, using a combination of relay and solid state logic. Several circuit board failures have occurred in the POV panels. Failures are detected by alarms and monthly fan functional tests. Because of the

immediate detection of failures and ability to replace cards while the units are at power, long-term degradation of the cards is unaffected by extension of the 18-month surveillances.

As noted in LER 92-021-01, in August 1992 the random failure of a surge suppression diode caused a common mode failure of Unit 2 auxiliary and fuel handling buildings' ventilation systems. The systems were restarted manually within one hour. A design change was completed in both units to remove the diodes and eliminate the common mode failure mechanism, and a failure modes and effects analysis was completed for the panels. Although the diode failure may have been related to long term degradation, monthly and quarterly testing of the auxiliary building fans and filters using the POV panels ensures that failures would be found independently of refueling interval testing.

Additional actions that have been completed to enhance POV panel reliability include implementation of an electrolytic capacitor replacement program for the POV input cards and development and implementation of a periodic diagnostic test for POV functions.

M-2A and M-2B Dampers: Significant recurring maintenance to make these 72-inch dampers leak tight was performed prior to receiving the TS change specifying leakage requirements in 1993. The routine preventive maintenance activities for the dampers and monthly surveillances of damper position have provided satisfactory condition monitoring since 1993.

Supply Fan Backdraft Dampers: The supply fan backdraft dampers have historically experienced significant corrosion from the damp ocean air leading to binding and failure of the dampers to close completely when supply fans are shutdown. As noted previously, binding of a backdraft damper was a contributory factor to inadvertent fan shutdown in LER 2-87-020-01. The dampers are currently inspected and maintained on a biannual frequency, and overhauled as necessary. The preventive maintenance frequency will not be affected by extension of the surveillance interval and provides satisfactory condition monitoring.

Charcoal Preheaters: Existing preventative maintenance and monthly surveillances provide satisfactory condition monitoring. In 1990, the Unit 2 preheater EH30 tripped during two monthly surveillances. The breaker cubicle was found to have two loose terminations, which were repaired. The problem has not recurred.

Industry Experience

Industry experience and generic NRC communications were reviewed. As noted above, issues concerning carbon testing methodologies have been addressed. However, since insufficient performance data is available using the revised test methodology, DCPP is not requesting extension of the carbon surveillance tests at this time.

Summary

The surveillance, maintenance, and operating history of the ABVS supports the conclusion that the effect on safety of extending the surveillance interval is small. There are no recurring surveillance problems, and other, more frequent surveillance tests provide assurance of system operability. The preventive maintenance programs for the major dampers, fans, heaters, and filters of this system have been reviewed and determined to support extension of the surveillance intervals.

PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS change.

D. NO SIGNIFICANT HAZARDS EVALUATION

The proposed changes to TS 4.7.6.1b.1), 4.7.6.1b.3), 4.7.6.1d.1), 4.7.6.1d.2), 4.7.6.1d.3), and 4.7.6.1d.4) extend the surveillance interval for testing the ABVS from at least once per 18 months to at least once per refueling interval (i.e., 24 months nominal, 30 months maximum).

The administrative changes to combine TS 4.7.6.1b.2) and 4.7.6.1c. on charcoal adsorber testing make no change in any frequency or testing requirement of either of the two TS.

The following evaluation is the basis for the no significant hazards consideration determination.

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

   The ABVS is not associated with the initiation of any previously evaluated accident. The increased surveillance interval does not alter the intent or method by which ventilation system testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated. The surveillance, maintenance, and operating history of the ABVS indicates that the system will continue to perform satisfactorily with a longer surveillance interval. The preventive maintenance program for

ABVS components is independent of refueling shutdowns, and provides assurance that degradation mechanisms such as corrosion and wear are adequately addressed.

The administrative change regarding conditional and periodic charcoal adsorber sample testing does not alter the frequency, intent, or method by which ventilation system testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

The ABVS is not associated with the initiation of any accident. The surveillance and maintenance history indicates that the ABVS will continue to effectively perform its design function for longer operating cycles. Additionally, the increased surveillance interval does not result in any physical modifications, affect safety function performance, or alter the intent or method by which surveillance tests are performed.

The administrative change regarding carbon testing does not result in any physical modifications, affect safety function performance, or alter the frequency, intent, or method by which surveillance tests are performed.

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

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

Evaluation of historical surveillance and maintenance data indicates there have been few problems with the ABVS. There are no indications that potential problems would be cycle-length dependent. There is no safety analysis impact since this change will have no effect on any safety limit, protection system setpoint, or limiting condition of operation, and there is no hardware change that would impact existing safety analysis acceptance criteria.

The administrative change regarding combination of the carbon testing requirements does not result in any physical modifications, affect

safety function performance, or alter the frequency, intent, or method by which surveillance tests are performed.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

SAFETY AND NO SIGNIFICANT HAZARDS EVALUATIONS

ITEMS 22, 23, 24, 25, 26, 27, 28, 29
TECHNICAL SPECIFICATION
3/4.9.12

FUEL HANDLING BUILDING VENTILATION SYSTEM

A. DESCRIPTION OF CHANGE

These Technical Specification (TS) changes would revise the frequency of certain surveillance requirements provided in TS 3/4.9.12, "Fuel Handling Building Ventilation System," from at least once per 18 months to at least once per REFUELING INTERVAL (nominal 24 months, maximum 30 months). Additionally, administrative changes are proposed to maintain consistency for TS items which are not proposed for surveillance extension.

Item	Technical Specification
22.	TS 4.9.12b.1), verifies that with a system flow rate of 35,750 cfm ± 10 percent and exhausting through the HEPA filters and charcoal adsorbers, the damper M-29 is closed. The surveillance frequency would be extended to REFUELING INTERVAL.
23.	TS 4.9.12b.2), verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1 percent and uses the test procedure guidance in Regulatory Positions C.5.a, C.5.c, and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, and the system flow rate is 35,750 cfm ± 10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.
24.	TS 4.9.12b.3), regarding charcoal adsorber carbon testing on an 18-month frequency and under certain conditions, would be deleted. All control room ventilation system carbon tests would be combined into TS 4.9.12c.
25.	TS 4.9.12.b4), verifies that the system flow rate is 35,750 cfm ± 10 percent during system operation when tested in accordance with ANSI N510-1980. The surveillance frequency would be extended to REFUELING INTERVAL.
26.	TS 4.9.12c. regarding carbon sampling would be expanded to include the 18-month frequency and conditions currently associated with TS 4.9.12b.3), above.

27. TS 4.9.12d.1), verifies that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 4.1 inches water gauge while operating the system at a flow rate of 35,750 cfm ±10 percent. The surveillance frequency would be extended to REFUELING INTERVAL.

28. TS 4.9.12d.2), verifies that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks. The surveillance frequency would be extended to REFUELING INTERVAL.

29. TS 4.9.12d.3), verifies that the system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere during system operation. The surveillance frequency would be extended to REFUELING INTERVAL.

The fuel handling building (FHB) ventilation system TS is also the subject of previously submitted License Amendment Request (LAR) 96-06. The relationship between the LARs is discussed in Attachment A.

The proposed changes are provided in the marked-up copies of TS pages 3/4 9-13 and 3/4 9-14 in Attachment B. The proposed new TS pages are provided in Attachment C.

B. BACKGROUND

The FHB ventilation system for each Diablo Canyon Power Plant (DCPP) unit consists of two redundant sets of supply and exhaust fans with roughing and HEPA filters and charcoal adsorber banks. A third full capacity exhaust fan without a charcoal bank is provided for normal operations. The system supplies filtered outside air to various locations in the FHB to support personnel comfort and equipment cooling. Exhaust ventilation is drawn so as to sweep the surface of the spent fuel pool, and is filtered and discharged via the plant vent.

The system is designed with each exhaust fan's capacity greater than each supply fan's capacity. A supply fan will not start unless exhaust fan flow is established. These design features, in conjunction with the integrity of the barriers forming the FHB pressure boundary, allow the system to establish and maintain a negative pressure in the FHB. Negative pressure in the building prevents the release of airborne iodine to the environment via unfiltered release paths during a postulated FHB accident.

The FHB ventilation system has two operating modes: normal and iodine removal. The difference between the modes is in the treatment of exhaust air. In normal mode, the third exhaust fan runs, exhausting air through roughing and HEPA filters. In iodine removal mode, the third exhaust fan is shutdown and

isolated by damper M-29. One of the two safety-related exhaust fans starts and directs building exhaust air through charcoal adsorber banks, in addition to roughing and HEPA filters. In either mode, only one supply fan and one exhaust fan operate.

The safety function of the FHB ventilation system is to mitigate the consequences of a design basis fuel handling accident. Additionally, the FHB ventilation system provides cooling for safety-related equipment such as the auxiliary feedwater pumps. On receiving a high radiation signal from the FHB radiation monitors, the ventilation system automatically switches to the iodine removal mode.

C. SAFETY EVALUATION

Administrative Changes

The administrative changes propose to delete TS 4.9.12b.3) and to combine the various intervals and conditions when carbon testing is required into one surveillance requirement, TS 4.9.12c. No changes were made to the testing intervals, conditional surveillances, or testing methods. The changes provide uniformity across the TS associated with carbon testing. There is no change in the operation or testing of the FHB ventilation system, or the ability of the system to perform its safety function.

In January 1994, DCPP changed carbon testing methodologies. The first carbon samples analyzed under the ASTM D 3803-1989 standard provided results which were much more conservative than those obtained previously, resulting in failed charcoal adsorber banks, which were replaced. DCPP has not had sufficient operating experience under the new standard to provide baseline information on the rate of carbon degradation. Therefore, TS 4.9.12b.3) is not proposed for surveillance interval extension at this time.

Surveillance Extension Changes

Capacity and performance verification of the FHB ventilation system is performed on an 18-month frequency. Surveillance testing is usually scheduled for performance shortly before new fuel receipt for the associated refueling outage to provide maximum assurance of system operability during the periods when a fuel handling accident could occur. However, testing may be performed at any time during the fuel cycle if necessary.

Automatic actuation to the iodine removal mode is currently tested quarterly to meet TS 4.3.3.1 radiation monitor channel functional testing requirements. By definition, a channel functional test must verify operability of associated alarm or trip functions. Therefore, verification of startup of one of the safety-related exhaust fans with a safeguards filter train, automatic shutdown of the normal

operations exhaust fan and closure of its associated inlet damper M-29 is verified quarterly. Prior to July 1995, radiation monitor functional testing was performed on a monthly frequency. In July, the NRC issued License Amendments 102 and 101, changing the frequency of testing to quarterly.

Assurance of FHB operability is provided by the surveillance test performed at least once each 31 days for TS 4.9.12a. This TS requires initiating flow through the HEPA filters and charcoal adsorbers for at least 15 minutes. During the test, correct damper alignment, including M-29, is verified and total charcoal adsorber bed operation time is verified to be less than 720 hours. Finally, all doors, seals, and capped wall penetrations that are important to the integrity of the pressure boundary of the FHB are verified closed or sealed. Additional system data are recorded to trend the differential pressure (dP) across the fan filters to aid in determining when filter replacement is necessary.

Operating History

A review of the operating history of the FHB ventilation system was completed. None of the equipment has failed to operate when actual or inadvertent high radiation signals were received. The supply fans and normal operations exhaust fan are in service on a regular basis to satisfy building ventilation requirements. The regular system use provides opportunities to detect equipment problems due to normal wear.

The FHB has been the subject of several License Event Reports (LERs) during the life of the plant. Most of the reports were due to inadvertent automatic actuations of the system to the accident mode (iodine removal), a conservative action. LERs related to equipment degradation over time are discussed in the Surveillance and Maintenance History sections.

Surveillance History

Surveillance test results were reviewed for every refueling outage on each unit for those tests performed on an 18-month frequency. Automatic actuation test results (performed monthly until July 1995) were reviewed for the last three years.

<u>TS 4.9.12b.1)</u> verifies that, with the system operating at a flow rate of 35,750 cfm ± 10 percent and exhausting through the HEPA filters and charcoal adsorbers, the damper M-29 is closed. A review of 13 tests performed at an 18-month frequency determined that there have been no failures or problems meeting this TS.

<u>TS 4.9.12b.2)</u> verifies that the cleanup system satisfies the in-place penetration and bypass leakage testing acceptance criteria of less than 1 percent and the system flow rate is 35,750 cfm ± 10 percent. A review of 13 tests performed at

an 18-month frequency determined that there have been no failures or problems meeting this TS.

TS 4.9.12b.4) verifies that each train's system flow rate is 35,750 cfm ± 10 percent when tested in accordance with ANSI N510-1980. A review of 13 tests performed at an 18-month frequency identified one test failure.

In January 1991, Unit 1 exhaust fan E-6 air flow was below the TS minimum. After the ductwork air registers and flow monitors were cleaned, the test was repeated and the flow was acceptable. To prevent recurrence, cleaning activities were added to the preventive maintenance program to remove dust accumulations which may reduce air flow. Additionally, since the flow monitors provide obstructions in the ductwork and are not required for testing or operation of the system, they are being removed. No further problems meeting air flow requirements have occurred.

TS 4.9.12d.1) verifies that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 4.1 inches water gauge while operating the system at a flow rate of 35,750 cfm ± 10 percent. A review of 13 tests performed at an 18-month frequency determined that there have been no failures or problems meeting this TS.

TS 4.9.12d.2) verifies that on a high radiation test signal, the system automatically starts (unless already operating) and directs its exhaust flow through the HEPA filters and charcoal adsorber banks. A review of 173 tests performed on a monthly frequency since July 1992 (a minimum of 41 tests for each of the radiation monitors associated with the FHB ventilation system) determined that there have been no failures or problems meeting this TS.

TS 4.9.12d.3) verifies that the FHB ventilation system maintains the spent fuel storage pool area at a negative pressure of greater than or equal to 1/8 inch water gauge relative to the outside atmosphere during system operation. A review of 13 tests performed at an 18-month frequency identified three test failures. Additionally, a reportable event in 1993 was identified in regard to this TS. Although the required negative pressure was not maintained in each case, sufficient negative pressure was available in the FHB to ensure that the safety function of the system would have been satisfied in the event of a fuel handling accident.

As noted in LER 2-90-002-02, in February 1990 Unit 2 FHB failed the TS surveillance for negative pressure because hoses were routed through several FHB doors, blocking them open. Signs and administrative controls were improved, and this type of event has not recurred. The root cause was personnel error, and does not involve time-related degradation of the FHB.

As noted in LER 1-89-019-01, in January 1991 Unit 1 FHB failed the TS surveillance for negative pressure due to degradation of the sealing mechanisms of the building. To restore negative pressure, the supply flow to the FHB was reduced to provide greater operating margin, a seal was provided for the FHB moveable wall, and minor leakage paths were sealed. Permanent local dP instrumentation was added in the FHBs to allow more frequent monitoring, and a requirement was added to plant procedures to measure the dP within seven days prior to movement of fuel or heavy loads over the spent fuel pool.

In May 1991, Unit 2 FHB negative pressure failed the TS surveillance for negative pressure due to the supply fans providing excessive air flow. The root cause was determined to be inadequate administrative controls on the controller setpoint for the supply fan inlet vanes. To prevent recurrence, the method of supply air control was revised on both units. This event did not involve time-related degradation of the FHB and was not reportable because the TS 3.9.12 Action Statements were satisfied.

As noted in LER 2-93-004-01, in March 1993 Unit 2 FHB was noted to have inadequate negative pressure for a short time when a pressure boundary door was blocked open to allow dissipation of chemical fumes from a spill. A fuel assembly insert shuffle, in progress at the time, was terminated for the duration of the door opening. Corrective actions from the February 1990 event were successful in that the blocked door was reported and FHB pressure was checked immediately, allowing suspension of fuel handling activities. This event did not involve time-related degradation of the FHB.

The actions taken to prevent recurrence of loss of negative pressure have been successful. Only one occurrence was due to time-related degradation that could be aggravated by extension of surveillance intervals. Preventive maintenance activities and procedural requirements to verify FHB differential pressure before and during fuel handling activities are in place. These actions provide assurance that long-term FHB degradation will not cause reduction of negative pressure below the TS minimum as required by TS 3/4.9.12 and its Action Statements.

Maintenance History

A review of the maintenance history for six years (through January 1990) for the critical system components was performed. Maintenance on these components may be performed while the unit is at power. All of the components are part of the Reliability-Centered Maintenance Program. Many of the components receive preventive maintenance at intervals unrelated to refueling intervals.

The following components experienced significant corrective or preventive maintenance activities associated with conditions where the system could have

failed to perform its automatic safety function since January 1, 1990. The failures have not been of a recurring nature, and the majority have been random failures of single components. There is no historical evidence to indicate a degradation in performance that would render the FHB ventilation system unable to perform its intended safety function.

Fuel Handling Building The FHB metal siding was completely re-covered on both units in 1993 due to long-term degradation from oxidation. Covering the old siding with new was identified as a prudent action during the investigation of inadequate FHB negative pressure, discussed previously, to minimize asbestos release. The original siding was in place for approximately 20 years, and was a minor contributor to the reduction of FHB negative pressure. Siding oxidation is a long-term form of degradation relative to the maximum refueling outage surveillance interval of 30 months.

Ventilation Control Panels: The ventilation system control panels POV-1 and POV-2 for each unit provide system control and diagnostics in the main control room, using a combination of relay and solid state logic. Several circuit board failures have occurred in the POV panels. Failures are detected by alarms and monthly fan functional tests. Because of the immediate detection of failures and ability to replace cards while the units are at power, long-term degradation of the cards is unaffected by extension of the 18-month surveillances.

As noted in LER 92-021-01, in August 1992 the random failure of a surge suppression diode caused a common mode failure of the Unit 2 auxiliary and FHB ventilation systems. The systems were restarted manually within one hour. A design change was completed in both units to remove the diodes and eliminate the common mode failure mechanism, and a failure modes and effects analysis was completed for the panels. Although the diode failure may have been related to long-term degradation, monthly and quarterly testing of the auxiliary building fans and filters using the POV panels ensures that failures would be found independently of refueling interval testing.

Additional actions that have been completed to enhance POV panel reliability include implementation of an electrolytic capacitor replacement program for the POV input cards and development and implementation of a periodic diagnostic test for POV functions.

Industry Experience

Industry experience and generic NRC communications were reviewed. As noted above, issues concerning carbon testing have been addressed. However, since insufficient performance data is available using the revised test methodology, DCPP is not requesting extension of the carbon surveillance tests at this time.

Summary

The surveillance, maintenance, and operating history of the FHB ventilation system supports the conclusion that the effect on safety of extending the surveillance interval is small. There are no recurring surveillance or maintenance problems, and other, more frequent surveillance tests provide assurance of system operability. The preventive maintenance programs for the dampers, fans, and filters which constitute these systems have been reviewed, and determined to support extension of the surveillance intervals.

PG&E believes there is reasonable assurance that the health and safety of the public will not be adversely affected by the proposed TS change.

D. NO SIGNIFICANT HAZARDS EVALUATION

The proposed changes to TS 4.9.12b.1), 4.9.12b.2), 4.9.12b.4), 4.9.12d.1), 4.9.12d.2), and 4.9.12d.3), extend the surveillance interval for testing the FHB ventilation systems from at least once per 18 months to at least once per refueling interval (i.e., 24 months nominal, 30 months maximum).

The administrative changes to combine TS 4.9.12b.3) and 4.9.12c. on charcoal adsorber testing make no change in any frequency or testing requirement of either of the two TS.

The following evaluation is the basis for the no significant hazards consideration determination.

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

   The increased surveillance interval does not alter the intent or method by which ventilation system testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated. The surveillance, maintenance, and operating history of the FHB ventilation system indicates that the system will continue to perform satisfactorily with a longer surveillance interval. There is no known mechanism that would significantly degrade the performance of this equipment during normal plant operation over the proposed maximum surveillance interval.

   The administrative change regarding conditional and periodic charcoal adsorber sample testing does not alter the frequency, intent, or method by which ventilation system testing is conducted, does not alter the way any structure, system, or component functions, and does not change the manner in which the plant is operated.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

   The FHB ventilation system is not associated with the initiation of any accident. The surveillance and maintenance history indicates that the FHB ventilation system will continue to effectively perform its design function for longer operating cycles. Additionally, the increased surveillance interval does not result in any physical modifications, affect safety function performance, or alter the intent or method by which surveillance tests are performed.

   The administrative change regarding carbon testing does not result in any physical modifications, affect safety function performance, or alter the frequency, intent, or method by which surveillance tests are performed.

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

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

   Evaluation of historical surveillance and maintenance data indicate there have been few problems with the FHB ventilation system. There are no indications that potential problems would be cycle-length dependent. There is no safety analysis impact since this change will have no effect on any safety limit, protection system setpoint, or limiting condition of operation, and there is no hardware change that would impact existing safety analysis acceptance criteria.

   The administrative change regarding combination of the carbon testing requirements does not result in any physical modifications, affect safety function performance, or alter the frequency, intent or method by which surveillance tests are performed.

   Therefore, the proposed change does not involve a significant reduction in a margin of safety.