

# CONTROLLED BY USER

## CONTAINMENT SYSTEMS

### HYDROGEN PURGE CLEANUP SYSTEM

#### LIMITING CONDITION FOR OPERATION

3.6.4.3 A containment hydrogen purge cleanup system, shared among the three units, shall be OPERABLE and capable of being powered from a minimum of one OPERABLE emergency bus.

APPLICABILITY: MODES 1\* and 2.\*

#### ACTION:

With the containment hydrogen purge cleanup system inoperable and one hydrogen recombiner OPERABLE as determined by Specification 4.6.4.2, restore the hydrogen purge cleanup system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

4.6.4.3 The hydrogen purge cleanup system 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 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 testing acceptance criteria and uses the test procedures of 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 50 scfm  $\pm$  10%.
  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.\*\*

\*With less than two hydrogen recombiners OPERABLE.

\*\* ANSI N509-1980 is applicable for this specification.

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## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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3. Verifying a system flow rate of 50 scfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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.\*
- d. At least once per 18 months by:
  1. Verifying that the pressure drop across the combined HEPA filters, pre-filters and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 50 scfm  $\pm$  10%.
  2. Verifying that the heaters dissipate at least 0.5 kW when tested in accordance with ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.

\* ANSI N509-1980 is applicable for this specification.



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## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 6000 cfm  $\pm$  10%.
  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.\*
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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.\*
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
  2. Verifying that the system starts on an SIAS test signal.
- e. After each complete or partial replacement of an HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm  $\pm$  10%.

\* ANSI N509-1980 is applicable for this specification.



## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 6000 cfm  $\pm$  10%.
  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.\*
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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.\*
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, heaters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  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.
  3. Verifying that the system maintains the fuel building at a measurable negative pressure relative to the outside atmosphere during system operation.

\* ANSI N509-1980 is applicable for this specification.

## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment automatic isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The only valves in the Table 6.2.4-1 of the PVNGS FSAR that are not required to be listed in Table 3.6-1 are the following: main steam safety valves and main steam atmospheric dump valves. The main steam safety valves and the atmospheric dump valves have very high pressure setpoints to actuate and are covered by Specifications 3/4.7.1.1 and 3/4.7.1.6, respectively.

#### 3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit (or the purge system) is capable of controlling the expected hydrogen generation associated with (1) zirconium-water reactions, (2) radiolytic decomposition of water and (3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

There is a hydrogen monitor and a oxygen monitor in the Post Accident Sampling System (PASS). There is a line from the two containment hydrogen monitors to the PASS which allows the licensee to monitor hydrogen concentration in the containment following an accident with the PASS. An OPERABLE hydrogen monitor in the PASS allows the licensee to enter Modes 1 and 2 with one containment hydrogen monitor inoperable. For the hydrogen monitor in PASS to be OPERABLE, the valves in the piping to the monitor must be OPERABLE.

*The use of ANSI standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).*



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by proper documentation and that the books should be kept up-to-date at all times.

In the second part, the author details the various methods used to verify the accuracy of the accounts. This includes comparing the ledger balances with the bank statements and conducting regular physical counts of the assets.

The final section covers the procedures for handling discrepancies and correcting errors. It states that any difference between the books and the actual cash should be investigated immediately and corrected as soon as the cause is identified.

## PLANT SYSTEMS

### BASES

#### 3/4.7.7 CONTROL ROOM ESSENTIAL FILTRATION SYSTEM

The OPERABILITY of the control room essential filtration system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

The OPERABILITY of the ESF pump room air exhaust cleanup system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

*(Add the same sentence)*

#### 3/4.7.9 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Review Board. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number



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## REFUELING OPERATIONS

### BASES

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A shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during surveillance testing of ECCS pumps. This is necessary to meet Surveillance 4.5.2, flow testing of the HPSI pumps without other pumps running, and 4.3.3.5, testing of the containment spray pumps and LPSI pumps during surveillance of the remote shutdown system.

### 3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

### 3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth (at least 23 feet above the top of the spent fuel) is available to remove a nominal 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly for a maximum fuel rod pressurization of 1200 psig. The minimum water depth is consistent with the assumptions of the safety analysis.

### 3/4.9.12 FUEL BUILDING ESSENTIAL VENTILATION SYSTEM

The limitations on the fuel building essential ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

*The use of ANSI Standard N509(1980) in lieu of ANSI Standard N509(1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.2 and C.6.6, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).*

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## CONTAINMENT SYSTEMS

### HYDROGEN PURGE CLEANUP SYSTEM

#### LIMITING CONDITION FOR OPERATION

3:6.4.3 A containment hydrogen purge cleanup system, shared among the three units, shall be OPERABLE and capable of being powered from a minimum of one OPERABLE emergency bus.

APPLICABILITY: MODES 1\* and 2\*.

#### ACTION:

With the containment hydrogen purge cleanup system inoperable and one hydrogen recombiner OPERABLE as determined by Specification 4.6.4.2, restore the hydrogen purge cleanup system to OPERABLE status within 30 days or be in at least HOT STANDBY within the next 6 hours.

#### SURVEILLANCE REQUIREMENTS

- 4.6.4.3 The hydrogen purge cleanup system 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 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 testing acceptance criteria and uses the test procedures of 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 50 scfm  $\pm$  10%.
    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.\*\*

\*With less than two hydrogen recombiners OPERABLE.

\*\* ANS N509-1980 is applicable for this specification.



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## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

3. Verifying a system flow rate of 50 scfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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.\*
- d. At least once per 18 months by:
  1. Verifying that the pressure drop across the combined HEPA filters, pre-filters and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 50 scfm  $\pm$  10%.
  2. Verifying that the heaters dissipate at least 0.5 kW when tested in accordance with ANSI N510-1980.
- e. After each complete or partial replacement of a HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 50 scfm  $\pm$  10%.

\* ANSI N509-1980 is applicable for this specification.





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# CONTROLLED BY USER

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 6000 cfm  $\pm$  10%.
  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\*.
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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\*.
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
  2. Verifying that the system starts on an SIAS test signal.
- e. After each complete or partial replacement of an HEPA filter bank by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm  $\pm$  10%.
- f. After each complete or partial replacement of a charcoal adsorber bank by verifying that the charcoal adsorbers remove greater than or equal to 99.0% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1980 while operating the system at a flow rate of 6000 cfm  $\pm$  10%.

\* ANSI N509-1980 is applicable for this specification.

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## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS (Continued)

1. Verifying that the cleanup system satisfies the in-place testing acceptance criteria and uses the test procedures of 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 6000 cfm  $\pm$  10%.
  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\*.
  3. Verifying a system flow rate of 6000 cfm  $\pm$  10% during system operation when tested in accordance with ANSI N510-1980.
- c. 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\*.
- d. At least once per 18 months by:
1. Verifying that the pressure drop across the combined HEPA filters, pre-filters, heaters, and charcoal adsorber banks is less than 8.4 inches Water Gauge while operating the system at a flow rate of 6000 cfm  $\pm$  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.
  3. Verifying that the system maintains the fuel building at a measurable negative pressure relative to the outside atmosphere during system operation.

\* ANSI N509-1980 is applicable for this specification.



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## CONTAINMENT SYSTEMS

### BASES

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#### 3/4.6.3 CONTAINMENT ISOLATION VALVES

The OPERABILITY of the containment automatic isolation valves ensures that the containment atmosphere will be isolated from the outside environment in the event of a release of radioactive material to the containment atmosphere or pressurization of the containment and is consistent with the requirements of GDC 54 through GDC 57 of Appendix A to 10 CFR Part 50. Containment isolation within the time limits specified for those isolation valves designed to close automatically ensures that the release of radioactive material to the environment will be consistent with the assumptions used in the analyses for a LOCA.

The only valves in the Table 6.2.4-1 of the PVNGS FSAR that are not required to be listed in Table 3.6-1 are the following: main steam safety valves and main steam atmospheric dump valves. The main steam safety valves and the atmospheric dump valves have very high pressure setpoints to actuate and are covered by Specifications 3/4.7.1.1 and 3/4.7.1.6, respectively.

#### 3/4.6.4 COMBUSTIBLE GAS CONTROL

The OPERABILITY of the equipment and systems required for the detection and control of hydrogen gas ensures that this equipment will be available to maintain the hydrogen concentration within containment below its flammable limit during post-LOCA conditions. Either recombiner unit (or the purge system) is capable of controlling the expected hydrogen generation associated with (1) zirconium-water reactions, (2) radiolytic decomposition of water and (3) corrosion of metals within containment. These hydrogen control systems are consistent with the recommendations of Regulatory Guide 1.7, "Control of Combustible Gas Concentrations in Containment Following a LOCA," March 1971.

*The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2; Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).*

The following table shows the results of the experiments conducted on the 15th and 16th of August 1904. The first column gives the number of the experiment, the second column the number of the subject, the third column the number of the trial, the fourth column the number of the error, and the fifth column the number of the correct answer.

Exp. No.	Subj. No.	Trial No.	Error No.	Correct Answer
1	1	1	0	100%
1	1	2	0	100%
1	1	3	0	100%
1	1	4	0	100%
1	1	5	0	100%
1	1	6	0	100%
1	1	7	0	100%
1	1	8	0	100%
1	1	9	0	100%
1	1	10	0	100%
1	1	11	0	100%
1	1	12	0	100%
1	1	13	0	100%
1	1	14	0	100%
1	1	15	0	100%
1	1	16	0	100%
1	1	17	0	100%
1	1	18	0	100%
1	1	19	0	100%
1	1	20	0	100%
1	1	21	0	100%
1	1	22	0	100%
1	1	23	0	100%
1	1	24	0	100%
1	1	25	0	100%
1	1	26	0	100%
1	1	27	0	100%
1	1	28	0	100%
1	1	29	0	100%
1	1	30	0	100%
1	1	31	0	100%
1	1	32	0	100%
1	1	33	0	100%
1	1	34	0	100%
1	1	35	0	100%
1	1	36	0	100%
1	1	37	0	100%
1	1	38	0	100%
1	1	39	0	100%
1	1	40	0	100%
1	1	41	0	100%
1	1	42	0	100%
1	1	43	0	100%
1	1	44	0	100%
1	1	45	0	100%
1	1	46	0	100%
1	1	47	0	100%
1	1	48	0	100%
1	1	49	0	100%
1	1	50	0	100%
1	1	51	0	100%
1	1	52	0	100%
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1	1	54	0	100%
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1	1	56	0	100%
1	1	57	0	100%
1	1	58	0	100%
1	1	59	0	100%
1	1	60	0	100%
1	1	61	0	100%
1	1	62	0	100%
1	1	63	0	100%
1	1	64	0	100%
1	1	65	0	100%
1	1	66	0	100%
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1	1	68	0	100%
1	1	69	0	100%
1	1	70	0	100%
1	1	71	0	100%
1	1	72	0	100%
1	1	73	0	100%
1	1	74	0	100%
1	1	75	0	100%
1	1	76	0	100%
1	1	77	0	100%
1	1	78	0	100%
1	1	79	0	100%
1	1	80	0	100%
1	1	81	0	100%
1	1	82	0	100%
1	1	83	0	100%
1	1	84	0	100%
1	1	85	0	100%
1	1	86	0	100%
1	1	87	0	100%
1	1	88	0	100%
1	1	89	0	100%
1	1	90	0	100%
1	1	91	0	100%
1	1	92	0	100%
1	1	93	0	100%
1	1	94	0	100%
1	1	95	0	100%
1	1	96	0	100%
1	1	97	0	100%
1	1	98	0	100%
1	1	99	0	100%
1	1	100	0	100%

## PLANT SYSTEMS

### BASES

#### 3/4.7.7 CONTROL ROOM ESSENTIAL FILTRATION SYSTEM

The OPERABILITY of the control room essential filtration system ensures that the control room will remain habitable for operations personnel during and following all credible accident conditions. The OPERABILITY of this system in conjunction with control room design provisions is based on limiting the radiation exposure to personnel occupying the control room to 5 rem or less whole body, or its equivalent. This limitation is consistent with the requirements of General Design Criterion 19 of Appendix A, 10 CFR Part 50.

The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).

#### 3/4.7.8 ESF PUMP ROOM AIR EXHAUST CLEANUP SYSTEM

The OPERABILITY of the ESF pump room air exhaust cleanup system ensures that radioactive materials leaking from the ECCS equipment within the pump room following a LOCA are filtered prior to reaching the environment. The operation of this system and the resultant effect on offsite dosage calculations was assumed in the safety analyses.

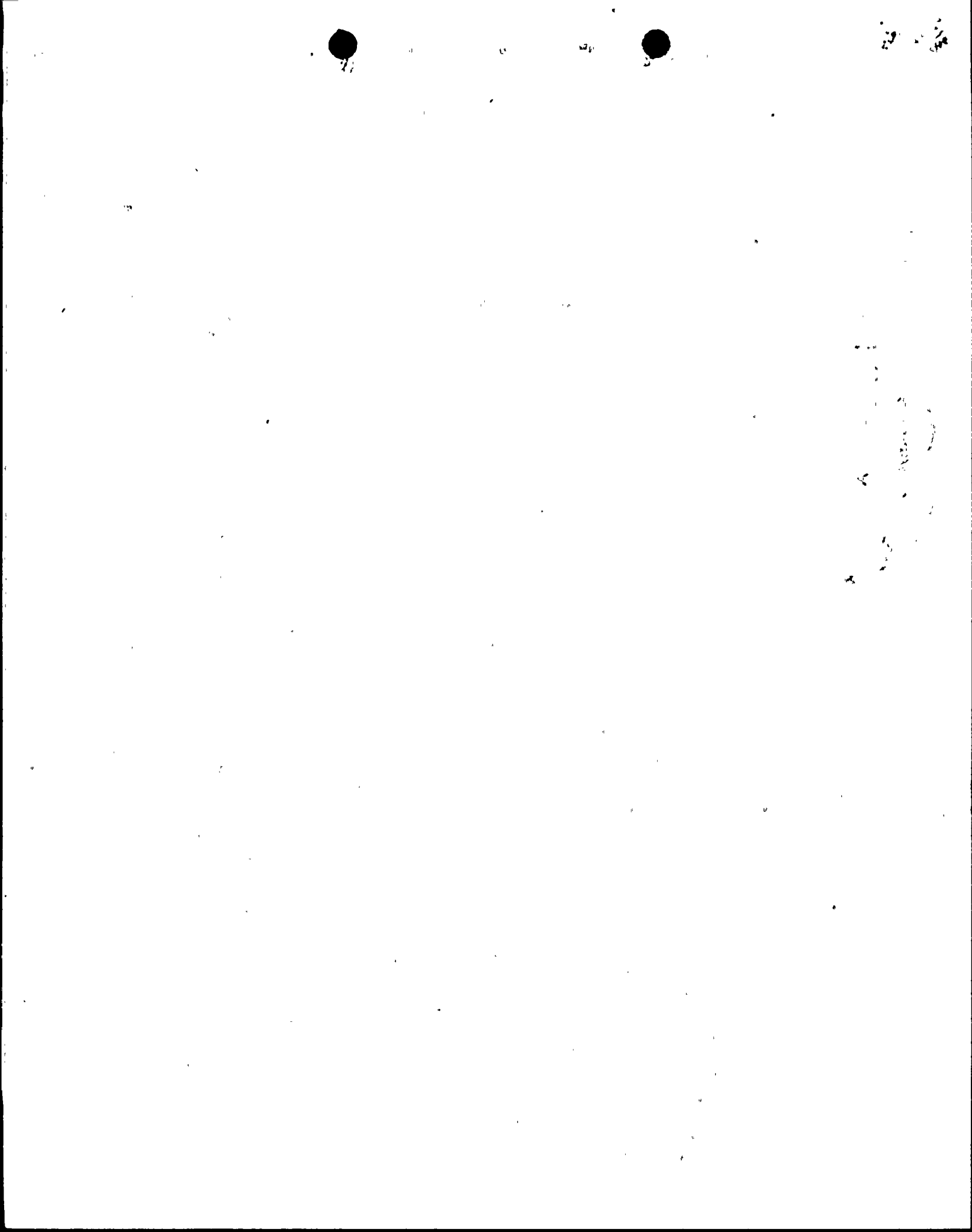
#### 3/4.7.9 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on nonsafety-related systems and then only if their failure or failure of the system on which they are installed, would have no adverse effect on any safety-related system.

Snubbers are classified and grouped by design and manufacturer but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip, and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer.

A list of individual snubbers with detailed information of snubber location and size and of system affected shall be available at the plant in accordance with Section 50.71(c) of 10 CFR Part 50. The accessibility of each snubber shall be determined and approved by the Plant Review Board. The determination shall be based upon the existing radiation levels and the expected time to perform a visual inspection in each snubber location as well as other factors associated with accessibility during plant operations (e.g., temperature, atmosphere, location, etc.), and the recommendations of Regulatory Guides 8.8 and 8.10. The addition or deletion of any hydraulic or mechanical snubber shall be made in accordance with Section 50.59 of 10 CFR Part 50.

The visual inspection frequency is based upon maintaining a constant level of snubber protection. Therefore, the required inspection interval varies inversely with the observed snubber failures and is determined by the number





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## REFUELING OPERATIONS

### BASES

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A shutdown cooling loop may be removed from operation for up to 1 hour per 8-hour period during surveillance testing of ECCS pumps. This is necessary to meet Surveillance 4.5.2, flow testing of the HPSI pumps without other pumps running, and 4.3.3.5, testing of the containment spray pumps and LPSI pumps during surveillance of the remote shutdown system.

### 3/4.9.9 CONTAINMENT PURGE VALVE ISOLATION SYSTEM

The OPERABILITY of this system ensures that the containment purge valves will be automatically isolated upon detection of high radiation levels within the containment. The OPERABILITY of this system is required to restrict the release of radioactive material from the containment atmosphere to the environment.

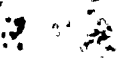
### 3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL

The restrictions on minimum water level ensure that sufficient water depth (at least 23 feet above the top of the spent fuel) is available to remove a nominal 99% of the assumed 10% iodine gap activity released from the rupture of an irradiated fuel assembly for a maximum fuel rod pressurization of 1200 psig. The minimum water depth is consistent with the assumptions of the safety analysis.

### 3/4.9.12 FUEL BUILDING ESSENTIAL VENTILATION SYSTEM

The limitations on the fuel building essential ventilation system ensure that all radioactive material released from an irradiated fuel assembly will be filtered through the HEPA filters and charcoal adsorber prior to discharge to the atmosphere. The OPERABILITY of this system and the resulting iodine removal capacity are consistent with the assumptions of the safety analyses.

*The use of ANSI Standard N509 (1980) in lieu of ANSI Standard N509 (1976) to meet the guidance of Regulatory Guide 1.52, Revision 2, Positions C.6.a and C.6.b, has been found acceptable as documented in Revision 2 to Section 6.5.1 of the Standard Review Plan (NUREG-0800).*



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