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June 11, 1984

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Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Mr. Denton:

ULNRC- 842

DOCKET NUMBER 50-483  
CALLAWAY PLANT, UNIT 1  
CALLAWAY TECHNICAL SPECIFICATIONS

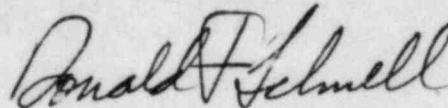
- References: 1) ULNRC-792 dated April 9, 1984  
2) ULNRC-816 dated May 11, 1984  
3) ULNRC-835 dated May 31, 1984

Attachment: Specifications Changed Since Reference 3

In the referenced letters Union Electric affirmed the accuracy of Callaway Technical Specifications. The attachment to this letter contains specifications which have changed since Reference 3 and which have been resolved between Union Electric and the Staff.

In my judgement, the Callaway Technical Specifications accurately reflect the plant design and operating program as described in the FSAR and other information on our docket.

Very truly yours,



Donald F. Schnell

DS/msc

Attachment

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SPECIFICATIONS CHANGED SINCE REFERENCE 3

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\* Pages are attached



## REACTIVITY CONTROL SYSTEMS

### CHARGING PUMPS - OPERATING

#### LIMITING CONDITION FOR OPERATION

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3.1.2.4 At least two centrifugal charging pumps shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.\*

ACTION:

With only one centrifugal charging pump OPERABLE, restore at least two centrifugal charging pumps to OPERABLE status within 72 hours or be in at least HOT STANDBY and borated to a SHUTDOWN MARGIN equivalent to at least  $1\% \Delta k/k$  at 200°F within the next 6 hours; restore at least two charging pumps to OPERABLE status within the next 7 days or be in HOT SHUTDOWN within the next 6 hours. |

#### SURVEILLANCE REQUIREMENTS

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4.1.2.4 At least two centrifugal charging pumps shall be demonstrated OPERABLE by verifying, on recirculation flow, that the pump develops a differential pressure of greater than or equal to 2400 psid when tested pursuant to Specification 4.0.5.

\*The provisions of Specifications 3.0.4 and 4.0.4 are not applicable for entry into MODE 3 for the centrifugal charging pump declared inoperable pursuant to Specification 4.1.2.3.2 provided that the centrifugal charging pump is restored to OPERABLE status within 4 hours prior to the temperature of one or more of the RCS cold legs exceeding 375°F.

TABLE 3.1 (Continued)

## ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION

FUNCTIONAL UNIT	TOTAL NO. OF CHANNELS	CHANNELS TO TRIP	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ACTION
8. Loss of Power					
a. 4 kV Bus Undervoltage -Loss of Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	19*
b. 4 kV Bus Undervoltage -Grid Degraded Voltage	4/Bus	2/Bus	3/Bus	1, 2, 3, 4	19*
9. Control Room Isolation					
a. Manual Initiation	2	1	2	All	26
b. Automatic Actuation Logic and Actuation Relays (SSPS)	2	1	2	1, 2, 3, 4	26
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	2	1	2	All	26
d. Phase "A" Isolation	See Item 3.a. above for all Phase "A" Isolation initiating functions and requirements.				
10. Solid-State Load Sequencer	2-1/Train	1/Train	2-1/Train	1, 2, 3, 4	25
11. Engineered Safety Features Actuation System Interlocks					
a. Pressurizer Pressure, P-11	3	2	2	1, 2, 3	20
b. Reactor Trip, P-4	4-2/Train	2/Train	2/Train	1, 2, 3	22

CALLAWAY - UNIT 1

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TABLE 4.3-2 (Continued)

ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION  
SURVEILLANCE REQUIREMENTS

<u>FUNCTIONAL UNIT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>ANALOG CHANNEL OPERATIONAL TEST</u>	<u>TRIP ACTUATING DEVICE OPERATIONAL TEST</u>	<u>ACTUATION LOGIC TEST</u>	<u>MASTER RELAY TEST</u>	<u>SLAVE RELAY TEST</u>	<u>MODES FOR WHICH SURVEILLANCE IS REQUIRED</u>
9. Control Room Isolation								
a. Manual Initiation	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	All
b. Automatic Actuation Logic and Actuation Relays (SSPS)	N.A.	N.A.	N.A.	N.A.	M(1)	M(1)	Q(3)	1, 2, 3, 4
c. Automatic Actuation Logic and Actuation Relays (BOP ESFAS)	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	All
d. Phase "A" Isolation	See Item 3.a. above for all Phase "A" Isolation Surveillance Requirements.							
10. Solid-State Load Sequencer	N.A.	N.A.	N.A.	N.A.	M(1)(2)	N.A.	N.A.	1, 2, 3, 4
11. Engineered Safety Features Actuation System Interlocks								
a. Pressurizer Pressure, P-11	N.A.	R	M	N.A.	N.A.	N.A.	N.A.	1, 2, 3
b. Reactor Trip, P-4	N.A.	N.A.	N.A.	R	N.A.	N.A.	N.A.	1, 2, 3

TABLE NOTATIONS

- (1) Each train shall be tested at least every 62 days on a STAGGERED TEST BASIS.
- (2) Continuity check may be excluded from the ACTUATION LOGIC TEST.
- (3) Except Relays K602, K620, K622, K624, K630, K740, and K741, which shall be tested at least once per 18 months during refueling and during each COLD SHUTDOWN exceeding 24 hours unless they have been tested within the previous 90 days.

TABLE 3.3-11 (Continued)

FIRE DETECTION INSTRUMENTS

<u>INSTRUMENT LOCATION</u>	<u>ZONE</u>	<u>TOTAL NUMBER OF INSTRUMENTS*</u>		
		<u>HEAT</u> (x/y)	<u>FLAME</u> (x/y)	<u>SMOKE</u> (x/y)
1406-Comp. Cool. Pmp. & Ht. Exch. A.	104			0/1
1406 Comp. Cool. Pmp. & Ht. Exch. A	118			2/0
1408-Aux. Bldg. 2026' Corridor #2	104			0/9
1408-Aux. Bldg. 2026' Corridor #2	118			5/0
1409-Elec. Pene. Rm. B	106			0/4(1)
1409-Elec. Pene. Rm. B	113			0/4(1)
1410-Elec. Pene. Rm. A	107			0/8(1)
1410-Elec. Pene. Rm. A	114			0/8(1)
1413-Aux. Shutdown Pnl. Rm.	118			4/0
1501-Ctrl. Rm. A/C & Filt. Units B.	110			10/0
1504-Ctmt. Purge Exh. & Mech. Equip. B	108			18/0
1506-Ctmt. Purge Sup. AHU Rm. A	109			18/0
1507-Personnel Hatch Area	108			3/0
1509-Main Steam Iso. Valve Rm. #2	115		1/8-0	
1508-Main Steam Iso. Valve Rm. #1	115		1/8-0	
1512-Ctrl. Rm. A/C & Filt. Units A	110			10/0
1513-Ctrl. Bldg. Vent Sup. A/C Unit Rm.	109			3/0
Aux. Bldg. Duct 2047'6"	119			1/0
Containment**	201	1/0(2)		
Containment**	202	2/0(2)		
Containment**	203	1/0(2)		
Containment**	204	1/0(2)		
Containment**	206	3/0(2)		
Containment**	215	1/0(2)		
Containment**	216	1/0(2)		
Containment**	217	1/0(2)		
Containment**	218	1/0(2)		
Containment**	219			4/0
Containment**	220	1/0(2)		
3101-Ctrl. Bldg. 1974' Pipe Space	300			11/0
3105-Ctrl. Bldg. Elec. Chase S. 1974'	300			1/0
3106-Ctrl. Bldg. Elec. Chase N. 1974'	300			1/0
-Area Above Access Control	301			12/0
3229-Ctrl. Bldg. Elec. Chase S. 1984'	300			1/0
3230-Ctrl. Bldg. Elec. Chase N. 1984'	300			1/0
3301-ESF Swgr. Rm. #1	314			0/7(1)
3301-ESF Swgr. Rm. #1	315			0/7(1)
3302-ESF Swgr. Rm. #2	316			0/5(1)
3302-ESF Swgr. Rm. #2	317			0/5(1)
3305-Ctrl. Bldg. Elec. Chase S. 2000'	301			1/0
3306-Ctrl. Bldg. Elec. Chase N. 2000'	301			1/0
3403-Non-Vit. Swgr. & Xfmr. Rm. #1	304			0/1(1)
3403-Non-Vit. Swgr. & Xfmr. Rm. #1	305			0/1(1)
3404-Switchboard Rm. #4	321			0/2(1)
3404-Switchboard Rm. #4	322			0/2(1)
3405-Battery Rm. #4	303			2/0
3407-Battery Rm. #1	303			2/0



## REACTOR COOLANT SYSTEM

### 3/4.4.4 RELIEF VALVES

#### LIMITING CONDITION FOR OPERATION

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3.4.4 All power-operated relief valves (PORVs) and their associated block valves shall be OPERABLE.

APPLICABILITY: MODES 1, 2, and 3.\*

ACTION:

- a. With one or more PORV(s) inoperable because of excessive seat leakage, within 1 hour either restore the PORV(s) to OPERABLE status or close the associated block valve(s); otherwise, be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one PORV inoperable due to causes other than excessive seat leakage, within 1 hour either restore the PORV to OPERABLE status, or close the associated block valve and remove power from the block valve; restore the PORV to OPERABLE status within the following 72 hours or be in HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- c. With both PORV(s) inoperable due to causes other than excessive seat leakage, within 1 hour either restore each of the PORV(s) to OPERABLE status or close their associated block valve(s) and remove power from the block valve(s) and be in HOT STANDBY within the next 6 hours and COLD SHUTDOWN within the following 30 hours.
- d. With one or more block valve(s) inoperable, within 1 hour: (1) restore the block valve(s) to OPERABLE status, or close the block valve(s) and remove power from the block valve(s), or close the PORV and remove power from its associated solenoid valve; and (2) apply ACTION b. or c. above as appropriate, for the isolated PORV(s).
- e. The provisions of Specification 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.4.4.1 In addition to the requirements of Specification 4.0.5, each PORV shall be demonstrated OPERABLE at least once per 18 months by performance of a CHANNEL CALIBRATION.

4.4.4.2 Each block valve shall be demonstrated OPERABLE at least once per 92 days by operating the valve through one complete cycle of full travel unless the block valve is closed with power removed in order to meet the requirements of ACTION b. or c. in Specification 3.4.4.

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\*With all RCS cold leg temperatures above 368°F.

## CONTAINMENT SYSTEMS

### SURVEILLANCE REQUIREMENTS

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4.6.1.3 Each containment air lock shall be demonstrated OPERABLE:

- a. Within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, by verifying that the seal leakage is less than  $0.005 L_a$  as determined by precision flow measurements when measured for at least 30 seconds with the volume between the seals at a constant pressure of greater than or equal to 10 psig;
- b. By conducting overall air lock leakage tests at not less than  $P_a$ , 48 psig, and verifying the overall air lock leakage rate is within its limit:
  - 1) At least once per 6 months,# and
  - 2) Prior to establishing CONTAINMENT INTEGRITY when maintenance has been performed on the air lock that could affect the air lock sealing capability.\*
- c. At least once per 6 months by verifying that only one door in each air lock can be opened at a time.

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#The provisions of Specification 4.0.2 are not applicable.

\*This represents an exemption to Appendix J of 10 CFR Part 50.

## PLANT SYSTEMS

### 3/4.7.8 SNUBBERS

#### LIMITING CONDITION FOR OPERATION

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3.7.8 All snubbers shall be OPERABLE. The only snubbers excluded from the requirement 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.

APPLICABILITY: MODES 1, 2, 3, and 4. MODES 5 and 6 for snubbers located on systems required OPERABLE in those MODES.

#### ACTION:

With one or more snubbers inoperable on any system, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.7.8g. on the attached component or declare the attached system inoperable and follow the appropriate ACTION statement for that system.

#### SURVEILLANCE REQUIREMENTS

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4.7.8 Each snubber shall be demonstrated OPERABLE by performance of the following augmented inservice inspection program in lieu of the requirements of Specification 4.0.5.

a. Inspection Types

As used in this specification, type of snubber shall mean snubbers of the same design and manufacturer, irrespective of capacity.

b. Visual Inspections

Snubbers are categorized as inaccessible or accessible during reactor operation. Each of these groups (inaccessible and accessible) may be inspected independently according to the schedule below. The first inservice visual inspection of each type of snubbers shall be performed after 4 months but within 10 months of commencing POWER OPERATION and shall include all hydraulic and mechanical snubbers. If all snubbers of each type on any system are found OPERABLE during the first inservice visual inspection, the second inservice visual inspection of that system shall be performed at the first refueling outage. Otherwise, subsequent visual inspections of a given system shall be performed in accordance with the following schedule:

PLANT SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

<u>No. Inoperable Snubbers of Each Type on Any System per Inspection Period</u>	<u>Subsequent Visual Inspection Period*#</u>
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
8 or more	31 days ± 25%

c. Visual Inspection Acceptance Criteria

Visual inspections shall verify: (1) that there are no visible indications of damage or impaired OPERABILITY and (2) attachments to the foundation or supporting structure are secure, and (3) fasteners for attachment of the snubber to the component and to the snubber anchorage are secure. Snubbers which appear inoperable as a result of visual inspections may be determined OPERABLE for the purpose of establishing the next visual inspection interval, provided that: (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers irrespective of type on that system that may be generically susceptible; or (2) the affected snubber is functionally tested in the as-found condition and determined OPERABLE per Specification 4.7.8f. All snubbers connected to an inoperable common hydraulic fluid reservoir shall be counted as inoperable snubbers. For those snubbers common to more than one system, the OPERABILITY of such snubbers shall be considered in assessing the surveillance schedule for each of the related systems.

d. Transient Event Inspection

An inspection shall be performed of all hydraulic and mechanical snubbers attached to sections of systems that have experienced unexpected, potentially damaging transients as determined from a review of operational data and a visual inspection of the systems within 6 months following such an event. In addition to satisfying the visual inspection acceptance criteria, freedom-of-motion of mechanical snubbers shall be verified using at least one of the following: (1) manually induced snubber movement; or (2) evaluation of in-place snubber piston setting; or (3) stroking the mechanical snubber through its full range of travel.

\*The inspection interval for each type of snubber on a given system shall not be lengthened more than one step at a time unless a generic problem has been identified and corrected; in that event the inspection interval may be lengthened one step the first time and two steps thereafter if no inoperable snubbers of that type are found on that system.

#The provisions of Specification 4.0.2 are not applicable.



## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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#### e. Functional Tests

During the first refueling shutdown and at least once per 18 months thereafter during shutdown, a representative sample of snubbers of each type shall be tested using one of the following sample plans. The sample plan shall be selected prior to the test period and cannot be changed during the test period. The NRC Regional Administrator shall be notified in writing of the sample plan selected for each snubber type prior to the test period or the sample plan used in the prior test period shall be implemented:

- 1) A least 10% of the total of each type of snubber shall be functionally tested either in-place or in a bench test. For each snubber of a type that does not meet the functional test acceptance criteria of Specification 4.7.8f., an additional 10% of that type of snubber shall be functionally tested until no more failures are found or until all snubbers of that type have been functionally tested; or
- 2) A representative sample of each type of snubber shall be functionally tested in accordance with Figure 4.7-1. "C" is the total number of snubbers of a type found not meeting the acceptance requirements of Specification 4.7.8f. The cumulative number of snubbers of a type tested is denoted by "N". At the end of each day's testing, the new value of "N" and "C" (previous day's total plus current day's increments) shall be plotted on Figure 4.7-1. If at any time the point plotted falls in the "Reject" region, all snubbers of that type shall be functionally tested. If at any time the point plotted falls in the "Accept" region, testing of that group of snubbers may be terminated. When the point plotted lies in the "Continue Testing" region, additional snubbers of that type shall be tested until the point falls in the "Accept" region or the "Reject" region, or all the snubbers of that group have been tested. Testing equipment failure during functional testing may invalidate that day's testing and allow that day's testing to resume anew at a later time provided all snubbers tested with the failed equipment during the day of equipment failure are retested; or
- 3) An initial representative sample of 55 snubbers shall be functionally tested. For each snubber snubber type which does not meet the functional test acceptance criteria, another sample of at least one-half the size of the initial sample shall be tested until the total number tested is equal to the initial sample size multiplied by the factor,  $1 + C/2$ , where "C" is the number of snubbers found which do not meet the functional test acceptance criteria. The results from this sample plan shall be plotted using an "Accept" line which follows the equation  $N = 55(1 + C/2)$ . Each snubber point should be plotted as soon as the snubber is tested. If the point plotted falls on or

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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below the "Accept" line, testing of that type of snubber may be terminated. If the point plotted falls above the "Accept" line, testing must continue until the point falls in the "Accept" region or all the snubbers of that type have been tested.

The representative sample selected for the functional test sample plans shall be randomly selected from the snubbers of each type and reviewed before beginning the testing. The review shall ensure, as far as practicable, that they are representative of the various configurations, operating environments, range of size, and capacity of snubbers of each type. Snubbers placed in the same location as snubbers which failed the previous functional test shall be retested at the time of the next functional test but shall not be included in the sample plan. If during the functional testing, additional sampling is required due to failure of only one type of snubber, the functional test results shall be reviewed at that time to determine if additional samples should be limited to the type of snubber which has failed the functional testing.

#### f. Functional Test Acceptance Criteria

The snubber functional test shall verify that:

- 1) Activation (restraining action) is achieved within the specified range in both tension and compression;
- 2) Snubber bleed, or release rate where required, is present in both tension and compression, within the specified range; and
- 3) Where required, the force required to initiate or maintain motion of the snubber is within the specified range in both directions of travel.

Testing methods may be used to measure parameters indirectly or parameters other than those specified if those results can be correlated to the specified parameters through established methods.

#### g. Service Life Monitoring Program

An engineering evaluation shall be made of each failure to meet the functional test acceptance criteria to determine the cause of the failure. The results of this evaluation shall be used, if applicable, in selecting snubbers to be tested in an effort to determine the OPERABILITY of other snubbers irrespective of type which may be subject to the same failure mode.

## PLANT SYSTEMS

### SURVEILLANCE REQUIREMENTS (Continued)

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For the snubbers found inoperable, an engineering evaluation shall be performed on the components to which the inoperable snubbers are attached. The purpose of this engineering evaluation shall be to determine if the components to which the inoperable snubbers are attached were adversely affected by the inoperability of the snubbers in order to ensure that the component remains capable of meeting the designed service.

If any snubber selected for functional testing either fails to lock up or fails to move, i.e., frozen-in-place, the cause will be evaluated and, if caused by manufacturer or design deficiency, all snubbers of the same type subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated in Specification 4.7.8e. for snubbers not meeting the functional test acceptance criteria.

#### h. Functional Testing of Repaired and Replaced Snubbers

Snubbers which fail the visual inspection or the functional test acceptance criteria shall be repaired or replaced. Replacement snubbers and snubbers which have repairs which might affect the functional test results shall be tested to meet the functional test criteria before installation in the unit. Mechanical snubbers shall have met the acceptance criteria subsequent to their most recent service, and the freedom-of-motion test must have been performed within 12 months before being installed in the unit.

#### i. Snubber Service Life Program

The service life of hydraulic and mechanical snubbers shall be monitored to ensure that the service life is not exceeded between surveillance inspections. The maximum expected service life for various seals, springs, and other critical parts shall be determined and established based on engineering information and shall be extended or shortened based on monitored test results and failure history. Critical parts shall be replaced so that the maximum service life will not be exceeded during a period when the snubber is required to be OPERABLE. The parts replacements shall be documented and the documentation shall be retained in accordance with Specification 6.10.2.



## PLANT SYSTEMS

### 3/4.7.11 FIRE BARRIER PENETRATIONS

#### LIMITING CONDITION FOR OPERATION

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3.7.11 All fire barrier penetrations (walls, floor/ceilings, cable tray enclosures, and other fire barriers) separating safety related fire areas or separating portions of redundant systems important to safe shutdown within a fire area and all sealing devices in fire rated assembly penetrations (fire doors, fire windows, fire dampers, cable, piping, and ventilation duct penetration seals) shall be OPERABLE.

APPLICABILITY: At all times.

#### ACTION:

- a. With one or more of the above required fire barrier penetrations inoperable, within 1 hour establish a continuous fire watch on at least one side of the affected penetration, or verify the OPERABILITY of fire detectors on at least one side of the inoperable fire barrier and establish an hourly fire watch patrol.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.7.11.1 At least once per 18 months the above required fire rated assemblies and penetration sealing devices shall be verified OPERABLE by performing a visual inspection of:

- a. The exposed surfaces of each fire rated assembly,
- b. Each fire window/fire damper and associated hardware, and
- c. At least 10% of each type (electrical and mechanical) of sealed penetration. If apparent changes in appearance or abnormal degradations are found, a visual inspection of an additional 10% of each type of sealed penetration shall be made. This inspection process shall continue until a 10% sample with no apparent changes in appearance or abnormal degradation is found. Samples shall be selected such that each penetration seal will be inspected every 15 years.

4.7.11.2 Each of the above required fire doors shall be verified OPERABLE by inspecting the automatic hold-open, release and closing mechanism and latches at least once per 6 months, and by verifying:

- a. The OPERABILITY of the Fire Door Supervision System for each electrically supervised fire door by performing a TRIP ACTUATING DEVICE OPERATIONAL TEST at least once per 31 days,
- b. That each locked closed fire door without electrical supervision is closed at least once per 7 days,
- c. That doors with automatic hold-open and release mechanisms are free of obstructions at least once per 24 hours and performing a functional test at least once per 18 months, and
- d. That each unlocked fire door without electrical supervision is closed at least once per 24 hours.



## REFUELING OPERATIONS

### 3/4.9.6 REFUELING MACHINE

#### LIMITING CONDITION FOR OPERATION

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3.9.6 The refueling machine shall be used for movement of drive rods or fuel assemblies and shall be OPERABLE with:

- a. The refueling machine used for movement of fuel assemblies having:
  - 1) A minimum capacity of 4800 pounds,
  - 2) Automatic overload cutoffs with the following Setpoints:
    - a) Primary - less than or equal to 250 pounds above the indicated suspended weight for wet conditions and less than or equal to 350 pounds above the indicated suspended weight for dry conditions, and
    - b) Secondary - less than or equal to 150 pounds above the primary overload cutoff.
  - 3) An automatic load reduction trip with a Setpoint of less than or equal to 250 pounds below the suspended weight for wet or dry conditions.
- b. The auxiliary hoist used for latching and unlatching drive rods and thimble plug handling operations having:
  - 1) A minimum capacity of 3000 pounds, and
  - 2) A 1000-pound load indicator which shall be used to monitor lifting loads for these operation.

APPLICABILITY: During movement of drive rods or fuel assemblies within the reactor vessel.

#### ACTION:

With the requirements for refueling machine and/or auxiliary hoist OPERABILITY not satisfied, suspend use of any inoperable refueling machine crane and/or auxiliary hoist from operations involving the movement of drive rods and fuel assemblies within the reactor vessel.

#### SURVEILLANCE REQUIREMENTS

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4.9.6.1 The refueling machine used for movement of fuel assemblies within the reactor vessel shall be demonstrated OPERABLE within 100 hours prior

## REFUELING OPERATIONS

### SURVEILLANCE REQUIREMENTS (Continued)

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to removal of the reactor vessel head by performing a load test of at least 125% of the secondary automatic overload cutoff and demonstrating an automatic load cutoff when the refueling machine load exceeds the Setpoints of Specification 3.9.6a.2) and by demonstrating an automatic load reduction trip when the load reduction exceeds the Setpoint of Specification 3.9.6a.3).

4.9.6.2 Each auxiliary hoist and associated load indicator used for movement of drive rods within the reactor vessel shall be demonstrated OPERABLE within 100 hours prior to removal of the reactor vessel head by performing a load test of at least 1250 pounds.

### 3/4.4 REACTOR COOLANT SYSTEM

#### BASES

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#### 3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION

The plant is designed to operate with all reactor coolant loops in operation and maintain DNBR above 1.30 during all normal operations and anticipated transients. In MODES 1 and 2 with one reactor coolant loop not in operation this specification requires that the plant be in at least HOT STANDBY within 6 hours.

In MODE 3, two reactor coolant loops provide sufficient heat removal capability for removing decay heat; however, single failure considerations require that three loops be OPERABLE.

In MODE 4, and in MODE 5 with reactor coolant loops filled, a single reactor coolant loop or RHR loop provides sufficient heat removal capability for removing decay heat; but single failure considerations require that at least two loops (either RHR or RCS) be OPERABLE.

In MODE 5 with reactor coolant loops not filled, a single RHR loop provides sufficient heat removal capability for removing decay heat; but single failure considerations, and the unavailability of the steam generators as a heat removing component, require that at least two RHR loops be OPERABLE.

The operation of one reactor coolant pump (RCP) or one RHR pump provides adequate flow to ensure mixing, prevent stratification and produce gradual reactivity changes during boron concentration reductions in the Reactor Coolant System. The reactivity change rate associated with boron reduction will, therefore, be within the capability of operator recognition and control.

The restrictions on starting a reactor coolant pump in MODES 4 and 5 are provided to prevent RCS pressure transients, caused by energy additions from the Secondary Coolant System, which could exceed the limits of Appendix G to 10 CFR Part 50. The RCS will be protected against overpressure transients and will not exceed the limits of Appendix G by restricting starting of the RCPs to when the secondary water temperature of each steam generator is less than 50°F above each of the RCS cold leg temperatures.

## PLANT SYSTEMS

### BASES

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#### 3/4.7.8 SNUBBERS

All snubbers are required OPERABLE to ensure that the structural integrity of the Reactor Coolant System and all other safety-related systems are maintained during and following a seismic or other event initiating dynamic loads.

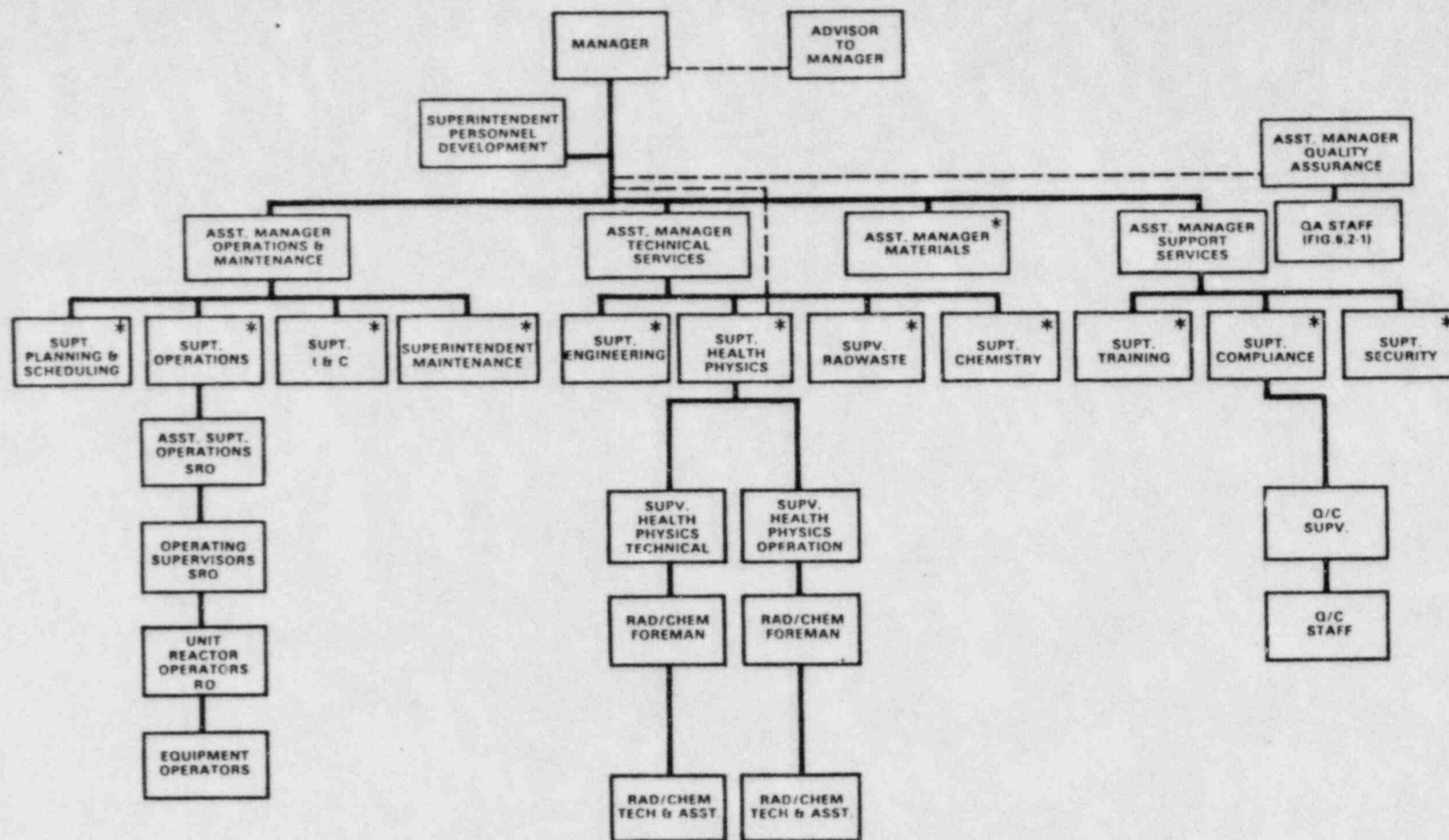
Snubbers are classified and grouped by design and manufacturer, but not by size. For example, mechanical snubbers utilizing the same design features of the 2-kip, 10-kip and 100-kip capacity manufactured by Company "A" are of the same type. The same design mechanical snubbers manufactured by Company "B" for the purposes of this Technical Specification would be of a different type, as would hydraulic snubbers from either manufacturer. Snubbers may also be classified and grouped by inaccessible or accessible for visual inspection purposes. Therefore, each snubber type may be grouped for inspection in accordance with accessibility.

A list of individual snubbers with detailed information of snubber location and size and of systems 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 On-Site Review Committee. 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 to each safety-related system during an earthquake or severe transient. Therefore, the required inspection interval varies inversely with the observed snubber failures on a given system and is determined by the number of inoperable snubbers found during an inspection of each system. In order to establish the inspection frequency for each type of snubber on a safety related system, it was assumed that the frequency of snubber failures and initiating events is constant with time and that the failure of any snubber on that system could cause the system to be unprotected and to result in failure during an assumed initiating event. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

The acceptance criteria are to be used in the visual inspection to determine OPERABILITY of the snubbers. For example, if a fluid port of a hydraulic





\* DEPARTMENT HEAD

FIGURE 6.2-2  
UNIT ORGANIZATION