

RANCHO SECO UNIT 1
TECHNICAL SPECIFICATIONS

Limiting Conditions for Operation

3.14 FIRE SUPPRESSION

3.14.1 INSTRUMENTATION

SPECIFICATION

3.14.1.1 Fire detection zones shown in Table 3.14-1 shall have all detection instrumentation OPERABLE.

3.14.1.2 With any instrumentation NOT OPERABLE in the zones shown in Table 3.14-1:

- a. Within 1 hour establish a fire watch patrol to inspect zone(s) with the inoperable instrument(s) at least once per hour, unless the instrument(s) is located inside the containment, then inspect the containment at least once per 8 hours or monitor the containment air temperature at least once per hour at the points below:

TE-52009	Reactor Building Cooling Units A & B Air In
TE-52010	Reactor Building Cooling Units C & D Air In
TE-53406	Top of Reactor Shielding
TE-53405	Top of Reactor Shielding
TE-53202	Top of Reactor Building

- b. Restore the inoperable instrument(s) to OPERABLE status within fourteen (14) days; or
- c. In lieu of any other report required by Specification 6.9, prepare and submit a special report to the Commission pursuant to Specification 6.9.5.E within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the instrument(s) to OPERABLE status.

3.14.2 Water System

Specification

3.14.2.1 The fire suppression water system shall be OPERABLE with:

- a. Two high-pressure pumps with a capacity of 2000 gal/min with their discharge aligned to the fire suppression header.

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3.14.2.1 (Continued)

- b. Two separate water supplies containing a minimum of 2,000,000 gallons each.
- c. An OPERABLE flow path capable of taking suction from the circulating water system and the Site Reservoir or the Folsom South Canal and transferring the water through distribution piping with OPERABLE sectionalizing control or isolation valves to the yard hydrant curb valves, the last valve ahead of the water flow alarm device on each sprinkler or hose standpipe, and the last valve ahead of the deluge valve on each deluge or spray system required to be OPERABLE per Specifications 3.14.3.1 and 3.14.5.

3.14.2.2 With one pump and/or one water supply inoperable, restore the inoperable equipment to OPERABLE status within 7 days or, in lieu of any other report required by Specification 6.9.5.E, prepare and submit a Special Report to the Commission pursuant to Specification 6.9 within the next 30 days outlining the plans and procedures to be used to restore the inoperable equipment to OPERABLE status or to provide an alternate backup pump of supply.

3.14.2.3 With no fire suppression water system OPERABLE:

- a. Establish a backup fire suppression water system equivalent to Specification 3.14.2.1 within 24 hours.
- b. In lieu of any other report required by Specification 6.9, submit a Special Report in accordance with Specification 6.9.5.E:
 - 1) By telephone within 24 hours,
 - 2) Confirmed by telegraph, mailgram or facsimile transmission no later than the first working day following the event, and
- c. In writing within 14 days following the event, outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

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TABLE 3.14-1

FIRE DETECTION INSTRUMENTS FOR SAFETY SYSTEMS

Detection Zone	Instrument Location	Number of detectors in zones- All Required to be OPERABLE		
		Heat	Flame	Smoke
4	Control and Computer Room Cabinets	0	0	48
5	South East Uncontaminated Area - Turbine Deck, Auxiliary Building	0	0	3
7	Contaminated Area - Turbine Deck, Auxiliary Building	0	0	3
11	West Battery Room - Mezzanine Level, Auxiliary Building	0	0	8
12	West Battery Charger Room - Mezzanine Level, Auxiliary Building	0	0	4
13	West 480V Switchgear Room - Mezzanine Level, Auxiliary Building	0	0	4
14	West Cable Shaft - Auxiliary Building	0	0	6
15	East Cable Shaft - Auxiliary Building	0	0	6
16	East 480V Switchgear Room - Mezzanine Level, Auxiliary Building	0	0	4
17	East Battery Charger Room - Mezzanine Level, Auxiliary Building	0	0	4
19	Communication Room - Mezzanine Level, Auxiliary Building	0	0	8
20	Electrical Penetration Room - Mezzanine Level, Auxiliary Building	0	0	21
21	Reactor Building, 20 feet to 40 feet Level	0	0	3

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TABLE 3.14-1

FIRE DETECTION INSTRUMENTS FOR SAFETY SYSTEMS (Continued)

Detection Zone	Instrument Location	Number of detectors in zones- All Required to be OPERABLE		
		Heat	Flame	Smoke
31	Auxiliary Lube Oil Area - Grade Level, Turbine Building	6	0	0
32	Main Lube Oil - Grade Level, Turbine Building	8	0	0
33	Hydrogen Sealed Oil Unit - Grade Level, Turbine Building	4	0	0
35	Main Feed Pump Area	16	0	0
36	West Nuclear Battery Room - Grade Level, Auxiliary Building	0	0	8
37	West 4160V Switchgear Room - Grade Level, Auxiliary Building	0	0	4
38	East 4160V Switchgear Room - Grade Level, Auxiliary Building	0	0	4
39	East Nuclear Battery Room - Grade Level, Auxiliary Building	0	0	8
40	North Diesel Generator Room - Grade Level, Auxiliary Building	4	0	0
41	South Diesel Generator Room - Grade Level, Auxiliary Building	4	0	0
42	Electrical Penetration Room - Grade Level, Auxiliary Building	0	0	19
43	Chemical Mix Area - Grade Level, Auxiliary Building	0	0	7

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TABLE 3.14-1

FIRE DETECTION INSTRUMENTS FOR SAFETY SYSTEMS (Continued)

Detection Zone	Instrument Location	Number of detectors in zone- All required to be OPERABLE		
		Heat	Flame	Smoke
44	Reactor Building, 0 feet to 20 feet Level	0	4	0
45	Electrical Penetration Area - Reactor Building	0	0	4
46	Hut Area - Basement Level, Auxiliary Building	0	0	25
47	Pipe Penetration Area - Basement Level, Auxiliary Building	0	0	18
48	Decay Heat Room - Auxiliary Building	0	0	3
53-54	Turbine Area	8	0	0
75	NSEB Switchgear Room B	4	0	4
76	NSEB Switchgear Room A	4	0	4
77	NSFB B Electrical Equipment	2	0	3
78	NSEB A Electrical Equipment	2	0	3
79	NSEB Battery GB	1	0	1
80	NSEB Battery GA	1	0	1
81	NSEB B Cable Shaft	0	0	6
82	NSEB A Cable Shaft	0	0	6
83	NSEB Corridor, 1 foot Level	0	0	2
84	NSEB Corridor, 21 feet Level	0	0	4
85	NSEB Corridor, 40 feet Level	0	0	6

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TABLE 3.14-1

FIRE DETECTION INSTRUMENTS FOR SAFETY SYSTEMS (Continued)

Detection Zone	Instrument Location	Number of detectors in zone- All required to be OPERABLE		
		Heat	Flame	Smoke
87	NSEB Computer Room B	0	0	5
89	NSEB Computer Room A	0	0	5
104	Technical Support Center	0	0	15
109	Chemical Lab Area - Auxiliary Building	0	0	19
110	Auxiliary Feedwater Pump Area	0	5	0

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3.14.3 Spray and Sprinkler Systems

Specification

3.14.3.1 The spray and/or sprinkler systems for each suppression zone shown in Table 3.14-2 shall be OPERABLE.

3.14.3.2 With one or more of the required spray and/or sprinkler systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas protected by inoperable sprinkler and/or spray system(s) in which redundant systems or components required to safely shut down and cool down the plant could be damaged; for other areas, protected by inoperable sprinkler and/or spray system(s) establish an hourly fire watch patrol. Restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.5.E. within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

3.14.4 CO2 System

Specification

3.14.4.1 The CO2 systems for each suppression zone shown in Table 3.14-3 shall be OPERABLE with a minimum capacity of 66% and a minimum pressure of 275 psig in the storage tank.

3.14.4.2 With one or more of the required CO2 systems inoperable, within one hour establish a continuous fire watch with backup fire suppression equipment for those areas protected by inoperable CO2 system(s) in which redundant systems or components required to safely shut down and cool the plant could be damaged; for other areas protected by inoperable CO2 system(s) establish an hourly fire watch patrol. Restore the system to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.5.E within the next 30 days outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system to OPERABLE status.

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3.14.5 Fire Hose Stations

Specification

3.14.5.1 The fire hose stations listed in Table 3.14-4 shall be OPERABLE.

3.14.5.2 With one or more of the fire hose stations above inoperable, route an additional equivalent size fire hose to the unprotected area(s) from an OPERABLE hose station within 1 hour if the inoperable fire hose is the primary means of fire suppression; otherwise, route the additional hose within 24 hours. Restore the fire hose station to OPERABLE status within 14 days or, in lieu of any other report required by Specification 6.9, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.5.E within the next 30 days outlining the action taken, the cause of the inoperability, and plans and schedule for restoring the station to OPERABLE status.

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Table 3.14-3

WATER SUPPRESSION ZONES

ZONES		AREAS
a.	3	Control Room - Turbine Deck, Auxiliary Building
b.	5	South East Uncontaminated Area - Turbine Deck, Auxiliary Building
c.	6	North West Uncontaminated Area - Turbine Deck, Auxiliary Building
d.	7	Contaminated Area - Turbine Deck, Auxiliary Building
e.	10	Mezzanine Level - Turbine Building
f.	18	Air Condition Equipment Room - Mezzanine Level, Auxiliary Building
g.	19	Communication Room - Mezzanine Level, Auxiliary Building
h.	20	Electrical Penetration Room - Mezzanine Level, Auxiliary Building
i.	31	Auxiliary Lube Oil Area - Grade Level, Turbine Building
j.	32	Main Lube Oil - Grade Level, Turbine Building
k.	33	Hydrogen Seal Oil Unit
l.	34	Heater Water Pump Area - Grade Level, Turbine Building
m.	35	Main Feed Pump Area
n.	40	North Diesel Generator Room - Grade Level, Auxiliary Building

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Limiting Conditions for Operation

Table 3.14-2

WATER SUPPRESSION ZONES (Continued)

	ZONES	AREAS
o.	41	South Diesel Generator Room - Grade Level, Auxiliary Building
p.	42	Electrical Penetration Room, Grade Level, Auxiliary Building
q.	43	Chemical Mix Area - Grade Level, Auxiliary Building
r.	46	Hut Area - Basement Level, Auxiliary Building
s.	47	Pipe Penetration Area - Basement Level, Auxiliary Building
t.	81	NSEB B Cable Shaft
u.	82	NSEB A Cable Shaft
v.	83	NSEB Corridor, 1 foot Level
w.	84	NSEB Corridor, 21 feet Level
x.	85	NSEB Corridor, 40 feet Level
y.	87	NSEB Computer Room B
z.	89	NSEB Computer Room A

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Table 3.14-3

CARBON DIOXIDE SUPPRESSION ZONES

	ZONES	AREAS
a.	11	West Battery Room - Mezzanine Level, Auxiliary Building
b.	12	West Battery Charger Room - Mezzanine Level, Auxiliary Building
c.	13	West 480V Switchgear Room - Mezzanine Level, Auxiliary Building
d.	14	West Cable Shaft - Auxiliary Building
e.	15	East Cable Shaft - Auxiliary Building
f.	16	East 480V Switchgear Room - Mezzanine Level, Auxiliary Building
g.	17	East Battery Charger Room - Mezzanine Level, Auxiliary Building
h.	19	Communication Room - Mezzanine Level, Auxiliary Building
i.	36	West Nuclear Battery Room - Grade Level, Auxiliary Building
j.	37	West 4160V Switchgear Room - Grade Level, Auxiliary Building
k.	38	East 4160V Switchgear Room - Grade Level, Auxiliary Building
l.	39	East Nuclear Battery Room - Grade Level, Auxiliary Building
m.	40	North Diesel Generator Room - Grade Level, Auxiliary Building

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Limiting Conditions for Operation

Table 3.14-3

CARBON DIOXIDE SUPPRESSION ZONES, Continued

	ZONES	AREAS
n.	41	South Diesel Generator Room - Grade Level, Auxiliary Building
o.	53-54	Turbine Area
p.	75	NSEB Switchgear Room B
q.	76	NSEB Switchgear Room A
r.	77	NSEB B Electrical Equipment
s.	78	NSEB A Electrical Equipment
t.	79	NSEB Battery GB
u.	80	NSEB Battery GA

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Table 3.14-4

FIRE HOSE STATIONS

ID No.	Location
I	Auxiliary Building Hose Stations
FPHS-A-001	+40 ft. Level Corridor by Counting Room
FPHS-A-002	+40 ft. Level Corridor Across from Control Room
FPHS-A-003	+40 ft. Level Corridor by Chemistry Lab
FPHS-A-004	+40 ft. Level Corridor by Cleaning Room
FPHS-A-005	+20 ft. Level in Ventilation Equipment Room
FPHS-A-006	+20 ft. Level Corridor by Communications Room
FPHS-A-007	Grade Level by CRD Cooling Water Heat Exchanger
FPHS-A-008	+20 ft. Level Corridor by Ventilation Equipment Room
FPHS-A-009	+20 ft. Level Corridor by A/C Equipment Room
FPHS-A-010	Grade Level Corridor by Diesel Generator Room
FPHS-A-011	Grade Level Corridor Across from East 4160 Switchgear Rm
FPHS-A-012	Grade Level Corridor Across from East Battery Room
FPHS-A-013	Grade Level Corridor by East End Stairwell
FPHS-A-014	Grade Level by Waste Solidification Area
FPHS-A-015	-20 ft. Level HPI Pump A Room
FPHS-A-016	-20 ft. Level Containment Penetration Valve Area
FPHS-A-017	-20 ft. Level Corridor by Waste Gas Decay Tank Room

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Table 3.14-4

FIRE HOSE STATIONS (Continued)

ID No.	Location
FPHS-A-018	-20 ft. Level Corridor North of BA Evaporator Room
FPHS-A-019	-47 ft. Level Stairway by East and West DHR Pump Rooms
FPHS-A-020	-20 ft. Level Corridor East of HPI Pump B Room
II	NSEB Hose Stations
FPHS-N-001	NSEB First Floor Corridor North
FPHS-N-002	NSEB First Floor Corridor South
FPHS-N-003	NSEB Second Floor Corridor North
FPHS-N-004	NSEB Second Floor Corridor South
FPHS-N-005	NSEB Third Floor Corridor North
FPHS-N-006	NSEB Third Floor Corridor South
III	Turbine Building Hose Stations
FPHS-T-001	1 Station North Wall Elevation 0'
FPHS-T-002	1 Station South Wall Elevation 0'
FPHS-T-003} FPHS-T-004}	2 Stations East Wall Elevation 0'
FPHS-T-005} FPHS-T-006}	2 Stations West Wall Elevation 0'
FPHS-T-007	1 Station North Wall Elevation 20'
FPHS-T-008	1 Station South Wall Elevation 20'

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Table 3.14-4

FIRE HOSE STATIONS

ID No.	Location
FPHS-T-009} FPHS-T-010}	2 Stations East Wall Elevation 20'
FPHS-T-011} FPHS-T-012}	2 Stations West Wall Elevation 20'
FPHS-T-013	1 Station North Wall Elevation 40'
FPHS-T-014	1 Station South Wall Elevation 40'
FPHS-T-015} FPHS-T-016}	2 Stations East Wall Elevation 40'
FPHS-T-017} FPHS-T-018}	2 Stations West Wall Elevation 40'
IV	Hydrants
FHV-002	Hydrant No. 2
FHV-003	Hydrant No. 3
FHV-024	Hydrant No. 24
FHV-026	Hydrant No. 26

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3.14.6 Fire Rated Assemblies

Specification

- 3.14.6.1 All fire rated assemblies (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 (fire doors, fire windows, fire dampers, cable, piping, and ventilation duct penetration seals) shall be OPERABLE.
- 3.14.6.2 With one or more of the above required fire rated assemblies and/or sealing devices inoperable, within one hour either establish a continuous fire watch on at least one side of the affected assembly, or verify the OPERABILITY of fire detectors on at least one side of the inoperable assembly and establish an hourly fire watch patrol. Restore the inoperable fire rated assembly and sealing device to OPERABLE within 7 days or, in lieu of any other reports required by Specification 6.9, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.5.E within the next 30 days outlining the action taken, the cause of the inoperable fire rated assembly and/or sealing device and plans and schedule for restoring the fire assembly and sealing device to OPERABLE status.

Bases

OPERABILITY of all fire detection instrumentation ensures that adequate warning capability is available for the prompt detection of fires. This capability is required in order to detect and locate fires in their early stages. Prompt detection of fires will reduce the potential for damage to safety-related equipment or redundant systems important to safe shutdown and is an integral element in the overall facility fire protection program.

In the event that a portion of the fire detection instrumentation is inoperable, the establishment of frequent fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is returned to service.

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Bases (Continued)

The OPERABILITY of the fire suppression systems ensures that adequate fire suppression capability is available to confine and extinguish fires occurring in any portion of the facility where safety-related equipment or redundant systems important to safe shutdown is located. The fire suppression system consists of the water system, spray and/or sprinklers, CO₂, and fire hose stations. The collective capability of the fire suppression systems is adequate to minimize potential damage to safety related equipment or redundant systems important to safe shutdown and is a major element in the facility fire protection program.

In the event that portions of the fire suppression systems are inoperable, alternate backup fire fighting equipment is required to be made available in the affected areas until the affected equipment can be restored to service.

In the event that the fire suppression water system becomes inoperable, immediate corrective measures must be taken since this system provides the major fire suppression capability of the plant. The requirement for a twenty-four (24) hour report to the Commission provides for prompt evaluation of the acceptability of the corrective measures to provide adequate fire suppression capability for the continued protection of the nuclear plant.

The operable integrity of the fire rated assemblies ensures that fires will be confined or adequately retarded from spreading to adjacent portions of the facility. This design feature minimizes the possibility of a single fire rapidly involving several areas of the facility prior to detection and extinguishment. The fire rated assemblies are a passive element in the facility fire protection program and are subject to periodic inspections. During periods of time when the fire rated assemblies are inoperable, an hourly or continuous fire watch, as appropriate, is required to be maintained in the vicinity of the affected assembly until the assembly is restored to operable status.

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Administrative Controls

Special Reports

6.9.5

Special reports shall be submitted to the Director of the Regulatory Operations Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

- A. A one-time only, "Narrative Summary of Operating Experience" will be submitted to cover the transition period (calendar year 1977).
- B. A Reactor Building structural integrity report shall be submitted within ninety (90) days of completion of each of the following tests covered by Technical Specification 4.4.2 (the integrated leak rate test is covered in Technical Specification 4.4.1.1).
 - 1. Annual Inspection
 - 2. Tendon Stress Surveillance
 - 3. End Anchorage Concrete Surveillance
 - 4. Liner Plate Surveillance
- C. In-Service Inspection Program
- D. Reserved for Proposed Amendment No. 43
- E. Status of Inoperable Fire Protection Equipment
 - 30 days (3.14.1.2,
3.14.2.2, 3.14.3.2,
3.14.2.3 3.14.5.2,
3.14.4.2,
3.14.6.2)
- F. Reserved for Proposed Amendment 125
- G. Radioactive Liquid Effluent Dose 30 days (3.17.2)
- H. Noble Gas Limits 30 days (3.18.2)
- I. Radio-Iodine and Particulates 30 days (3.18.3).

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Administrative Controls

Special Reports (Continued)

J. Gaseous Radwaste Treatment	30 days (3.19)
K. Radiological Monitoring Program	30 days (3.22)
L. Monitoring Point Substitution	30 days (3.22)
M. Land Use Census	30 days (3.23)
N. Fuel Cycle Dose	60 days (4.25)
O. Liquid Holdup Tanks	30 days (3.17.3)