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AUTH.NAME AUTHOR AFFILIATION
CRANE,P.A. Pacific Gas & Electric Co.
RECIP.NAME RECIPIENT AFFILIATION
STULZ,J.F. Light Water Reactors Branch 1

SUBJECT: Forwards summaries of recent plant mods including mod identified in SER Suppl 8,fire protection mod according to fire zones,other commitments not in SER Suppl 8 & mod different from those listed in SER Suppl 8.

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July 20, 1979

Mr. John F. Stolz, Chief
Light Water Reactors Branch No. 1
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

REGULATORY DOCKET FILE COPY

Re: Docket No. 50-275-OL
Docket No. 50-323-OL
Diablo Canyon Units 1 and 2

Dear Mr. Stolz:

Recent plant modification agreements concluded between your Staff and PGandE are summarized in the four tables attached to this letter. Modifications apply equally to Unit 1 and Unit 2, except where opposite hand areas do not provide identical functions. The contents of the tables are summarized below:

TABLE 1. - Modifications Identified in SER Supplement 8. This table lists modifications cross-referenced to agreement documentation. All fire protection modifications will be completed prior to initial operation.

TABLE 2. - Fire Protection Modifications According to Fire Zones. This table is a composite of fire protection commitments made in several letters and other submittals to the Staff.

TABLE 3. - Other Commitments not in SER Supplement 8. This table lists commitments neither identified in SER 8 nor related to fire protection.

TABLE 4. - Modifications Different From Those Listed in SER Supplement 8. All items in this table are fire protection issues for which an alternative resolution agreement has been concluded.

Two copies of this letter have been sent directly to Mr. R. H. Engelken, Region V, and five copies to Mr. Bart Buckley.

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Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it to me in the enclosed addressed envelope.

Very truly yours,

Philip A. Crane, Jr.

Enclosures

CC w/encs.: Mr. R. H. Engelken, Director
Region V, NRC
Mr. Bart Buckley

TABLE 1

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Supp. 8 Sections	Item	Reference	Remarks
2.3.3	On-site Met Program.	Am. 61 Supp. 2 (old program) Supp. 8 (new program)	Before power ascension
3.2.1	Seismically qualified aux. feed source (Reservoir)	Jan. 26, 1978) PG&E April 17, 1978) letters Also in Hosgri Appendix J	Before power ascension
	(Fire tank and piping connection to Auxiliary Feed System)	Hosgri Pg. 7-17 Amendment 77 PG&E letters of 12-19-78, 3-7-79; verbal NRC approval	Tech. spec. tank levels: 300,000 gal-Firewater 170,000 gal-CST Before power ascension
3.5	Turbine Missiles (weekly inlet valve testing)	July 6, 1978 letter FSAR Appendix A-16 NRC approval in SER 8	
	(Crane restriction)	Amendment 75 See Hosgri Report Pg. 4A-29, 30 NRC approval of 100-ton limit in SER 8	Hosgri analysis and resulting restrictions also eliminate concern for crane falling on turbine.
3.8.5.4.2(4)	Strengthening annulus platform steel	Audit submittals, Hosgri Pg. 13-2 NRC approval SER 8	Hosgri modification. Before fuel loading
3.8.5.4.5(3)	Turbine Building crane restrictions	Amendment 75	Before power ascension
3.8.5.4.5(4)	Turbine Bldg. modifications	Amendment 68	Before power ascension
3.8.5.4.7	Outdoor Storage Tanks - modifications	Hosgri Ch. 11	Before power ascension
3.9.3.5	Design Class II cold shutdown piping supports upgraded to Class I requirements.	June 30, 1978 letter Audit submittal	Before power ascension
3.9.3.7(2)	Component Cooling Water Heat Exchanger support modification	Audit submittal Hosgri Pg. 7-14 (Amendment 70)	Complete

TABLE 1

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Supp. 8 Sections	Item	Reference	Remarks
3.9.3.8	Aux. Feed Pump Turbine Nozzle loads - provide restraint	Resolved through audit. Shown on PG&E drawings.	Seismic restraint added to nozzle. Before power ascension
3.10.3	BOP Equipment which was retested	Wyle test reports	Modifications identified in test reports. Before fuel load
3.10.4	Solid State Protection System cabinets - Existing relays replaced with rotary relays	Wyle test reports	Before fuel load
3.10.4	(1) Barton, Fischer and Porter, and Rosemount P and ΔP transmitters - Model numbers of test specimens and reference to qualification test reports.	Hosgri Pg. 10-75 and 10-77. (Amendment 77)	Before power ascension
	(2) Signal level oscillations in P and ΔP transmitters	Hosgri Pg. 10-75, 76	
	(3) Sostman RTDs - Model numbers	Hosgri Pg. 10-128 and 10-128 a. Amendment 77	
	(4) Barton P and ΔP transmitters to replace Fischer and Porters - Model numbers		Resolved by (1) above
	(5) Rosemount P and ΔP transmitters to replace Fischer and Porters - Model numbers		Resolved by (1) above
7.6	RHR valve lockout and redundant position indication	FSAR Pg. 6.3-34b (Amendment 78)	By fuel loading
8.1	Fault current protection of containment electrical penetrations	SER Supp. 8 PG&E letters of 2-26-79 and 3-7-79	Primary level ok. Secondary level installed by first refueling

TABLE 1

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Supp. 8 Sections	Item	Reference	Remarks
9.1	Cranes	Hosgri Ch. 4A (Amendment 75) SER Supp. 8	
	(1) Intake Structure crane		Minor modifications. Added seismic hold-down and lateral restraint mechanism at the trolley and gantry wheel assembly.
	(2) Fuel Handling Building crane	Hosgri Pg. 4A-15 and 4A-11	Minor modifications. Load restricted to 15 tons on main and aux. hook. Load cell installed. Complete by fuel loading
	(3) Turbine Building crane	Hosgri Pg. 4A-29, 30	Cranes ok for loads up to 100 tons. Turbine Building columns modified. Minor modifications to crane. Complete by power ascension
	(4) Polar cranes	Hosgri Pg. 4A-23f	No restriction or modification
	(5) Manipulator cranes	Hosgri Pg. 4A-6, 7	Crossbracing added. Channels boxed-in. Cable support struct. modified. Complete
	(6) Spent fuel pool cranes	Hosgri Pg. 4A-10	Welds reinforced at bottom column connection. Hold-down bar stiffeners extended. Rail anchor bolts and clips added. Complete

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

9.6.1 Fire Protection

See Table 2 for a listing of fire protection modifications according to fire zones. The schedule for modifications is shown in the cover letter.

Listed below are other fire modifications.

Modification	Reference	Remarks
Emergency lighting units to be installed in:	PGandE letter dated 2-6-78	
1. Control Room		
2. Auxiliary Building control panel		
3. Hot shutdown panel		
4. Dedicated shutdown panel		
5. Cable spreading room		
6. Auxiliary feed pump room		
7. Diesel generator rooms		
8. Vital switchgear rooms		
9. Fuel handling building		
10. Manipulator crane area in containment		

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Other fire modifications (continued)

Modification	Reference	Remarks
Circuit breakers to motor operators for RHR system valves 8701 and 8702 to be open during normal plant operation.	PGandE letter 8-3-78	
Diablo Canyon fire protection program to conform to guidelines in "Nuclear Plant Fire Protection Functional Responsibilities, Administrative Controls, and Quality Assurance."	PGandE letter 8-3-78	
Communications sytems will be tested according to Regulatory Guide 1.68, Rev. 1, Appendix A, Section 1.n.13	PGandE letter 2-6-78	
Portions of the firewater system will be seismically qualified so that all firewater hose reels in safety-related areas of the plant will be available following a safe shutdown earthquake.	PGandE letter 11-13-78	
Cross-tie piping will be provided between the auxiliary and turbine buildings so that the fire pumps can supply water to any fire system component within the plant without the yard loop. Check valves will be installed in the six yard-loop feeder lines into the plant. Backup protection will be provided by three 250-gpm portable engine-driven fire pumps.	PGandE letter 11-13-78	

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Other fire modifications (continued)

Modification	Reference	Remarks
Fire system modifications will be reviewed to confirm that they could not adversely affect safety-related equipment in an earthquake. Emphasized in this evaluation will be new piping, smoke detectors in cabinets, and the Halon 1301 system in the safeguards room.	PGandE letter 11-13-78	
Hydrogen lines will be either rerouted out of areas containing safety-related equipment or enclosed within a seismically qualified guard pipe in safety-related areas.	PGandE letters 11-13-78 and 12-19-78	
The plant emergency operating procedures will be modified to require de-energizing valve motor operators at their motor control center after the valves have been aligned for safe shutdown, if a control room or cable-spreading room fire has necessitated valve actuation from the motor control centers.	PGandE letter 11-13-78	
Dedicated safe shutdown instrumentation will be provided which is not vulnerable to a control room or cable-spreading room fire. The instruments provided are pressurizer level and pressure, reactor coolant system temperature, and steam generator level and pressure.	PGandE letter 11-13-78	

MODIFICATIONS INDENTIFIED IN SER SUPPLEMENT 8

Other fire modifications (continued)

Modification	Reference	Remarks
Switches will be added to motor control centers to transfer control of components back to the control room from the hot shutdown panel, should a spurious transfer be caused by a fire.	PGandE letters 11-13-78, and 12-19-78	
The plant telephone system and portable radios will be tested according to Regulatory Guide 1.68.	PGandE letter 2-6-78	
Pressurizer pressure and level instrumentation lines will be protected by heat shielding in the vicinity of the reactor coolant pumps.	PGandE letter 2-6-78	
All key fire-system valves to be locked open or electrically supervised.	SER 8 PGandE letter 12-19-78 Verbal agreement	SER supplement 8 and 12-19-78 letter superseded by verbal agreement

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
1-A (Containment penetration area)	The area below redundant safe shutdown cabling in the containment penetration area will be designated as a "No Storage" area. This area consists of approximately 300° of the annular zone 1-A at elevation 91 ft. (excluded from being a "No Storage" area is the 60° sector in the vicinity of the fuel transfer tube assembly). Smoke detectors for containment penetration area. Flame traps to be added to reactor coolant pump oil shield drain lines and the drum overflow line. LT-406 to be located 20 feet from other level transmitters. LT-406 circuit to be routed away from other level transmitter circuits.	(1),(4)
3-B-1 and 3-B-2 (RHR HX and pump rooms)	Smoke detector for RHR pump room. Openings in the RHR pump room walls on either side of column line N will be sealed to upgrade these walls to a three-hour rated barrier.	(3)
3-C (Drain receiver tanks and gas decay tanks)	Install smoke detectors	(5)
3-F (Containment spray pumps)	Install smoke detectors	(5)
3-H-1 (Centrifugal charging pump room)	Smoke detectors, automatic sprinkler protection for this zone. Procedure to be established to jumper out control circuit for charging pump 1-3 in the event of fire in zone 3-H-1. Install "A" rated door and seal miscellaneous penetrations in wall between centrifugal charging pump room and reciprocating charging pump room. Fire barrier will not be constructed between centrifugal charging pumps. Procedure for jumpering-out lube oil system control circuitry will be posted inside each charging pump switchgear door.	(3)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zone

Fire Zone	Modification	Reference
3-H-2 (Reciprocating charging pump room)	Smoke detector. Procedure for jumpering-out lube oil system control circuitry will be posted inside charging pump switchgear door.	(3)
3-J (CCW pump rooms)	Smoke detector for each pump room, automatic sprinkler protection, barriers extended to separate CCW pump rooms, 2 hr fireproofing for 1 train of power circuits for diesel fuel transfer pumps in pump 1-1 room, procedure posted in CCW pump 1-1 and charging pump switchgear to jumper out control circuit in event of fire in CCW pump room 1-2 or 1-3.	(3),(6)
3-L (Boric acid evaporator area)	Motor driven auxiliary feedwater pump power circuits to be encased in a two-hour rated fire barrier in zone 3-L. West end of zone 3-L behind sample panel to be designated as a "No Storage" area. Add smoke detector.	(5),(6)
3-M (Safety injection pumps)	Smoke detector	(2)
3-O (Spent fuel pumps)	Smoke detector	(5)
3-P (Ventilation filters)	Smoke detector	(5)
3-P-1 (Fuel handling building supply fan room)	Smoke detector; fan room to be designated as a "No Storage" area.	(6)
3-P-4 (Auxiliary building exhaust fan E-1 room)	Smoke detector; fan room to be designated as a "No Storage" area.	(6)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
3-Q-1, 3-Q-2 (Auxiliary feedwater pump room)	Smoke detectors, automatic sprinkler protection. Barrier to be constructed to separate turbine driven auxiliary feedwater pump from motor driven auxiliary feedwater pumps. Circuit for FCV-95 to be relocated out of these zones.	(3),(6)
3-R (Fuel handling building, incl. fire pumps)	Smoke detectors	(5)
3-S (Hot shop area)	Smoke detectors	(5)
3-X (Boric acid transfer pumps, boric acid filters, CVCS demineralizers)	Smoke detectors to be provided in vicinity of boric acid transfer pumps and filters. Automatic sprinkler protection to be provided for east end of zone 3-X. Compartments in west end of zone 3-X to be designated as "Not Storage" areas.	(3),(6)
3-AA (Boric acid tank area)	Smoke detectors to be provided in vicinity of boric acid tanks and spent resin tanks. Compartments in west end of zone 3-AA to be designated as "No Storage" areas.	(6)
3-BB el. 100' (Penetration area)	Automatic sprinkler protection for this zone at el. 100'. Conduits for LCV-110, 111, (auxiliary feedwater system) to be rerouted to fire zone 3-BB, El. 85'.	(6),(8)
3-BB el. 115' (Penetration area)	Automatic sprinkler protection for this zone at el. 115'.	(6)
3-BB (Penetration area)	Three-hour rated pipe penetration seals to be added.	(2)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
4-A (Laboratory area)	Suspended ceiling to be replaced with an equivalent one-hour rated ceiling. Automatic sprinklers in ceiling retained. Smoke detectors provided. Electrical raceway at north end of lab area subdivided with two-hour fire barrier to separate F and G bus conduits.	(3)
4-B (Office area)	"No Storage" area	(3)
5-A (480-volt switchgear rooms)	Wall between Unit 1 and 2 480 volt switchgear room to be upgraded to 3-hour rating. Barriers separating redundant switchgear trains to be upgraded to 3-hour rating by replacing doors and panels with "A" labeled assemblies and fireproofing corner gaps between block walls and concrete walls. Ventilation ducts and supports outside rooms to be fireproofed to one-hour rating. Hose reel to be added to this area.	(3),(5)
5-A-4 (Area outside 480V switchgear rooms)	Transfer switches within MCC's to be provided to transfer control of components back to CR from the HSD panel, should a fire at HSD panel cause a spurious transfer of control. To be a "No Storage" area.	(3)
6-A (Battery rooms)	All doors and panels in fire zone boundaries in zone 6-A and its 5 sub-zones will be replaced with "A" labeled assemblies. Wall corner seals will be replaced with 3-hour rated barriers. Redundant Class 1E airflow switches to be installed in ventilation supply ducts to give control room annunciation for loss of battery room ventilation. Hose reel to be added to this area.	(4)
6-A-1 (Inverter room, bus F)	Ventilation fan S-44 power circuit to be rerouted out of this zone.	(6)
6-A-2 (Inverter room, bus G)	Ventilation fan S-44 power circuit to be rerouted out of this zone.	(6)
6-A-5 (Space west of battery rooms)	Either of ventilation fans S-43 and S-44 and all associated duct work to be protected with a one-hour rated fire barrier. Power circuit for S-44 to be relocated so that fan motor starter for S-43 and S-44 are separated by 15 ft. Smoke detectors to be installed. Zone 6-A-5 to be "No Storage" area.	(4),(6)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
7-A (Cable spreading room)	Instrument panel to be provided in zone 3-BB el. 100' with necessary safe shutdown instrument readouts. Instrumentation signals to panel will not be vulnerable to cable spreading room or control room fire. A firewater hose reel will be added to cable spreading room.	(6),(3)
8-A, 8-D (Computer rooms)	Wall between control room and computer room to be extended to concrete ceiling above to provide a one-hour fire barrier. Smoke detectors to be installed in computer room and computer room exhaust air duct.	(4)
8-B-1, 8-B-2 (Auxiliary building supply fan rooms)	Automatic sprinkler protection and smoke detectors to be provided in supply fan rooms.	(4)
8-B-3, 8-B-4 (Control room ventilation equipment)	Automatic sprinkler protection, smoke detectors, and a hose reel to be provided in these areas.	(4)
8-C (Control room)	Smoke detectors to be provided in the main control board, operator's console, and other safety related control cabinets. "C" labeled door to be provided to separate control room from adjoining restroom.	(4),(8)
8-E (Offices and record storage)	Smoke detector, "C" labeled doors to be provided to separate 8-E from control room.	(5),(8)
8-F (Security central alarm system)	"C" labeled doors to be provided to separate 8-F from control room.	(4)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
8-G, 8-H (Safeguards room)	Walls defining zone 8-G to be upgraded to 3-hour barriers. Three-hour rated dampers will be installed in the ventilation ducts. Administrative controls to prevent smoking and storage of combustibles. Smoke detectors and a Halon 1301 system to be installed.	(4)
10 (12KV switchgear room)	Banks of safe shutdown conduits to be boxed in with two-hour rated fire barriers. East wall of 12KV switchgear room to be upgraded to two-hour rating by installing rolling fire doors in vent openings and upgrading door and panels. A hose reel will be added in the vicinity of switchgear room.	(3)
11-A-1 (Diesel generator 1-1)	Circuit includes modification to fuel transfer pump control circuit. (Includes fusible plugs added to air lines to day tank level control valves.) Curbs to be added to diesel generator room doorways. Floor trenches running to radiator to be sealed. Modify diesel generator room ventilation.	(4),(5)
11-B-1 (Diesel generator 1-2)	Same as 11-A-1 above.	(4)
11-C-1 (Diesel generator 1-3)	Same as 11-A-1 above.	(4)
11-D (Corridor outside diesel generator rooms)	Two-hour fire proofing of conduits. Automatic sprinkler protection to be provided. Corridor to separated from rest of turbine bay by three-hour barrier.	(4),(7),(5)
12-D, 12F (Corridors outside 4KV CSR)	Hose reel to be added in vicinity of 4KV cable spreading rooms. Two-hour rated fire barriers to be constructed to spearate redundant safe shutdown circuits in corridors outside 4KV cable spreading rooms. Fire zones 12-D, 12-F, deleted and fire zones 12-A, 12-B, 12-C expanded to include the compartmentalized corridors.	(4),(7)

TABLE 2

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

Fire Zone	Modification	Reference
12-A, 12-B, 12-C (4KV cable spreading room)	Upgrade walls separating CSR's to two-hour rating.	(4)
13-A, 13-B, 13-C (4KV switchgear room)	Hose reels to be added in vicinity of switchgear rooms. Walls separating rooms to be two-hour barriers. Install three-hour dampers in ventilation exhaust ducts.	(4),(5)
13-D (Compartment west of 4KV switchgear rooms)	Ventilation ducts passing through this zone to be 4KV switchgear will be fireproofed for a one-hour rating with one and one-half-hour rated dampers where the ducts enter the switchgear rooms.	(4)
13-E (4KV switchgear ventilation fans)	Smoke detectors and automatic sprinkler protection for this zone.	(6)
14-A (Turbine building)	Conduits for auxiliary feedwater system LCV's (LCV-110,111) to be rerouted out of turbine building.	(6),(8)
14-E (CCW heat exchanger)	CCW heat exchanger area to be separated from rest of turbine building by three-hour fire barrier.	(5)
28 (Main transformer area)	Fusible link in air lines to MSIV's to be provided to allow valve closure if transformer fire encroaches upon main steam lines.	(6)
30-A-1, 30-A-2 (Auxiliary saltwater pump rooms)	Smoke detector to be provided outside auxiliary saltwater pump room doors.	(2)
31 (Fuel handling building corridor)	Automatic sprinkler protection for this zone.	(6)
S-3 (Auxiliary building stairwell, northeast corner)	Hallway at el. 85' to be designated as "No Storage" area.	(6)

Diablo Canyon Power Plant
Fire Protection Modifications According to Fire Zones

References

(1) Supplement 8 to the NRC Staff Safety Evaluation Report
(2) PGandE letter dated February 6, 1978
(3) PGandE letter dated August 3, 1978
(4) PGandE letter dated November 13, 1978
(5) Amendment 51 to the Diablo Canyon operating license application, "Fire Protection Review", Chapter 6
(6) Section 5 of "Supplementary Information for Fire Protection Review", June 6, 1978, submitted July 7, 1978
(7) PGandE letter dated December 19, 1978
(8) Verbal agreement

OTHER COMMITMENTS NOT IN SER SUPPLEMENT 8

Item	References	Remarks
1. Natural Circulation Cooldown Test	Hosgri Report, Appendix J, Page App. J-13 and PGandE Letter of 3-7-79	Test procedures being prepared by Plant Staff. Test to be run after initial criticality.
2. Qualification of NSS Equipment Outside Containment for Normal Environments	SER Supplement 7, Page 7-5 Amendment 67, FSAR Page 3.11-3	Install temperature monitoring and recording system like that for BOP equipment. Before fuel loading.
3. Degraded Grid Voltage - Undervoltage Relays	Verbal requirement by Faust Rosa. Verbal agreement by PGandE.	Install redundant undervoltage relays prior to fuel loading.
4. ATWS - Revise Operating Procedures to more specifically address ATWS	Revised procedures forwarded informally to NRC for review.	Available at site for inspection.

TABLE 4

MODIFICATIONS DIFFERENT FROM THOSE LISTED
IN SER SUPPLEMENT 8

SER Page	Modifications Described in SER	Actual Modifications
9-8	(c) Install automatic sprinklers in area containing CVCS demineralizers, filters, and boric acid transfer pumps.	Already included in (g), Boric Acid Transfer Pump Area, which will be sprinklered. See 12-19-78 PGandE letter.
9-8	(e) Install automatic sprinklers at containment cable penetrations.	As documented in 11-13-78 PGandE letter, separation between redundant trains of electrical cables inside Containment makes sprinklers unnecessary.
9-14	Install two-hour barriers between redundant trains of safe shutdown cables inside containment.	As discussed in a November 29, 1978, meeting with the NRC Staff and as documented in the 12-19-78 PGandE letter, separation is adequate without fire barriers. No modification made.
9-8	(h) Install automatic sprinklers in fire zone 3-BB	Consistent with previous commitments and PGandE letters of 7-7-78 and 12-19-78, sprinklers will be installed at Elevations 100 feet and 115 feet but not at 85 feet.
9-16	Install 2-hour barrier between redundant trains of auxiliary feedwater cables in fire zone 3-BB, El. 100'.	Reroute one train of auxiliary feedwater cables to fire zone 3-BB, El. 85' per verbal agreement.
9-8	Electrically supervise all key valves in fire water system.	Electrically supervise or lock open all key valves in fire water system per verbal agreement.
9-15	Install flame traps in diesel generator room drainage system.	As a result of 11-13-78 PGandE letter and 11-29-78 meeting, configuration of floor drains was found adequate to prevent flame spread. No flame traps required.
9-15	Install fire barriers between redundant trains of electric cables in fire zone 13-E	Incorrect fire zone reference in SER. Should be zone 12-D. Commitment made in 11-13-78 letter and confirmed in 11-29-78 meeting.