Vepco

CONTAINS 10 CFR 2.790 MATERIAL

VIRGINIA ELECTRIC AND POWER COMPANY, RICHMOND, VIRGINIA 23261

December 31, 1975

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Serial No. 773/110375A
LQA/JDL:vhe
Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Dear Mr. Moseley:

This is a supplement to our initial report dated December 4, 1975, which was submitted in response to IE Bulletin 75-04B. This supplemental information was requested by Mr. M. V. Sinkule of your staff and is provided as Attachment 1 to this letter and in the following comments relative to recommendations 73-2 and 73-4 appearing in the attachment.

Recommendation	Comment
73-2	Electronic tamper switches will be provided for outside screw and yoke (OS&Y) valves on the deluge headers and the OS&Y valves on the riser in the boiler room with remote indication in the control room. This work is expected to be completed by March 1, 1976.
73-4	We do not accept this recommendation for the automatic Cardox CO_2 system in the 4160V switchgear rooms at the 9'6' level. Installation of this system would make safe and orderly shutdown of the reactor from the emergency shutdown panel impossible under conditions wherein the Cardox CO_2 system had initiated.

As stated in our initial report it is our position that this Attachment 1, The Nuclear Energy Liability - Property Insurance Association (NEL-PIA) inspection report is proprietary information and should be excluded from the public document room.

It should be noted that the details of this inspection do not appear in the NEL-PIA report sheet but were forwarded to you as Attachment 5 to our letter of December 4, 1975.

Very truly yours,

C. M. Stallings
Vice President
Power Supply & Production Operations

cc: Director, Division of Reactor
Inspection Programs

CONTAINS 10 CFR 2.790 MATERIAL

ROPERTY DAMAGE
SPECTION REPORT
onferred with
Ledford, Ins. Dept.
Nicholls, Elec. Supt.
s Lash, Ins. Dept.

The Exchange, Loft A, Bldg. 3, Suite 323
Farmington Ave., Farmington, Conn. 0603

Property of VIRGINIA ELECTRIC & POWER CO.
SURRY POWER STATION
SURRY CO., VA. 23883

Virginia Electric and Power Company

ENTIAL
report should be made available to persons.

File No. N-171 (75-0)
Key File No. N-171
By M.J.Hudson/FGC
Date April 2,21,24, Hrs.
1975

SPRINKLERS: Are adequate.
VALVES: Are sealed.
WATERFLOW ALARMS: Local & annunciator in Control Room.
SUPERVISORY COVERS: Waterflow, pumps & part valves&carbon dioxide
PLANT OPERATION: 7 days, 24 hours

WATCHMAN SERVICE: Is satisfactory
ROUNDS: Hourly recorded idle periods
PORTABLE FIRE EQUIPMENT: Is adequate.
RECORDED SELF-INSPECTIONS: Fair
PRIVATE FIRE BRIGADE: Fair
PUBLIC FIRE DEPT: Poor-Vol.
WATER SUPPLIES: Good
NT EMERGENCY ORGANIZATION: Good
ADIOACTIVE WASTE HANDLING: Good
CRITICALITY CONTROL: Good

IMPAIRMENT NOTIFICATION: Given RED TAGS USED: Yes
WELDING & CUTTING: Is TAGS USED? No
ELECTRICAL EQUIPMENT: Good
MAINTENANCE: Good
CLEANLINESS: Good
SMOKING: Is controlled.
NATURE OF RISK: Nuclear power plant
PRODUCT: Electrical power

CONSTRUCTION: 1-4 sto. 34% fire resistive, 32% noncomb., 34% combustible, metal dec roof
NUCLEAR CONTAINMENT: Good
SPECIAL HAZARDS: Well cared for. Steam turbines, hydrogen cooled generators.

AREA MONITORING RECORDS: Good
RADIOISOTOPE HANDLING: Good
REACTOR TYPE: Pressurized water reacto
THERMAL POWER RATING: 2441 megawatt each

If there are any questions concerning the recommendations on this report or you have alternate solutions for them, please contact us.

NT
ES
NTS

On April 2, 1975, during this inspection, sectional control valve #65 was found full closed. This is a very serious condition as it could have caused accidental shut-o of fire water during an emergency condition. The valve was immediately opened and it was determined through waterflow loop tests on April 21 that the fire line was unobstructed. It is expected that this valve had been closed since the system impairment on October,1974. This condition pointed out the fact that self-inspecti program, as maintained, is not accomplishing its obviosuly necessary function. It understood that a new self-inspection program, which was written at the plant and h been reviewed and commented upon by this Association, is to be instituted immediately. It is further understood that during the first implementation of this program, a representative of this Association will accompany the participatiug personnel.

WATER SUPPLIES

No public water

Fire Dept. Conn. None

TEST RESULTS

G.P.M.	Flow Location	Static	Resid.	Pres. Location	Tested

PUMP CITY P.M.	HEAD RATING	DRIVE	AUTO. MAN.	SUCTION SOURCE	Shutoff Pres.	G.P.M.	Disc. Pres.	R.P.M.	SUCT. PRES. SUCT. SLIP	Cond.	Tested
00	106	Elec.	Auto.	2- 300,000 gal.w/	150	2660	132	1770	14	Good	4/21/75
00	106	Diesel	Auto.	288,000 gal. reserved with 400 gpm refill	142	2560	120	1740	13	"	

Highest Spe.

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Recent Changes and Comments Cont'd

The wood frame plastic covered work room in the No. 1 containment has been dismantled, and recommendation 74-1 is, therefore, removed. It is noted, however, that the materials for this structure are being kept in the Auxiliary Building. It is understood that this plastic material must be used for contaimination purposes. Fire treated, noncombustible wood should be used in lieu of the combustible wood being used now. No hot work, such as burning or welding, should be done near the plastic material.

It was noted during this inspection that security at this plant has been greatly upgraded. This has included training of guards, along with the addition or fence surrounding the entire plant with all gates monitored on cameras located in a central guard building which has been built approximately 50' east of the existing office building. This office is of metal deck on steel construction with insulated metal panel walls and partitions inside. All access to the plant grounds must be either through this building or approved by the guards manning it.

New Recommendations - None

RECOMMENDATIONS CONTINUED FROM PREVIOUS REPORT

71-15 A private fire brigade should be organized, trained and drilled at regular intervals. (In process)

73-1 The valves controlling fire protection such as post indicators outside and OS&Y valves inside should be checked on a weekly basis and should be kept sealed. (New program being initiated)

73-2 Electronic valve tamper switches should be provided for the valves at the main headers that do not presently have supervision. This would involve four sectional valves and two OS&Y valves for the wet systems in the turbine buildings. The other valves are supervised and with these not being supervised, it is possible to have a large scale impairment. This will necessitate providing 12 valve tamper switches, 6 for each header, with a signal sent to the control room. (On order.)

73-4 Extend the Cardox CO_2 system to automatically cover the 4160 v. Switchgear Rooms at the 9'6" level adjacent to the cable tunnels for Units 1 and 2.

Vepco

VIRGINIA ELECTRIC AND POWER COMPANY, RICHMOND, VIRGINIA 23261

December 4, 1975

Mr. Norman C. Moseley, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Region II - Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Serial No. 773/110375
LQA/JDL:cjd

Docket Nos. 50-280
50-281
License Nos. DPR-32
DPR-37

Dear Mr. Moseley:

We have reviewed IE Bulletin 75-04B forwarded by your letter of November 3, 1975.

Enclosed as Attachments 1 through 6 are copies of all fire protection inspections since March 22, 1975, and documentation relating to these inspections. Attachment 1 is the most recent follow-up audit of this area by the quality assurance staff. Attachment 2 is an inspection report from the Nuclear Energy Liability Property Insurance Association (NEL-PIA) documenting an inspection conducted by their staff. Attachment 3 is the station response to the initial audit conducted by the quality assurance staff in this area and a memo to file regarding station response. Attachment 4 is the initial quality assurance staff audit. Attachment 5 is a list of discrepancies prepared by the Vepco Insurance Department immediately after an NEL-PIA inspection in April 1975 and forwarded to Surry Power Station. Attachment 6 is a Periodic Test of firefighting equipment. This test is now in use at the station.

Actions taken or planned can be extracted from the initial audit, audit response, and follow-up audit. For purposes of clarity, however, they are listed as follows:

1. A person has been designated for the fire protection area having this as his prime responsibility.

2. Station personnel have been and are being formally trained in firefighting (22 at present).

3. A fire brigade has been established.

4. Approximately 80% of previously discovered fire equipment deficiencies had been repaired and repairs are continuing.

5. Repair of ventilation louvers at the top of the turbine building to provide automatic closure has been completed.

6. The station has established a monthly fire prevention inspection program with daily visual walkdown inspections in selected areas, and a monthly Periodic Test (PT 24.4) for fire protection systems.

7. A maintenance procedure for repair of fire-stops (EMP-C-FP-23) has been developed.

8. A Periodic Test for checking the continuing integrity of fire-stops is being developed. It is expected that this test will be implemented by 15 January 1976.

9. Preparations for flammability testing of fire-stops and materials are being implemented. The test is scheduled to be conducted at the North Anna Power Station prior to the end of this year.

10. Engineering Study 75-21, Fire System Louver Inspection, has been initiated by the Station engineering staff.

Vepco's position relative to the results of these inspections is as follows:

1. We believe that the results of these inspections were significant in pointing out an area which required corrective action.

2. We believe that we have demonstrated effective corrective action and have established measures which will aid in preventing a recurrence of these discrepancies.

3. We believe that this illustrates the effectiveness of our internal quality assurance program and that this has been corroborated by an objective third party, NEL-PIA, as set forth in Attachment 2.

4. We believe we have an adequate fire protection program in effect at our Surry Power Station and that it is so designed that there is reasonable assurance the health and safety of the public will be protected at all times.

It is our position that the results of these inspections (Attachments 1 through 6) are proprietary since insurance liability can be adversely affected by extraction of this information out of context and without reference to associated corrective action programs. It is therefore requested that the Attachments to this report be excluded from the public document room. Vepco has no objection to generalized statements such as "NEL-PIA and internal Vepco inspections discovered deficiencies in the firefighting and fire protection program at their operating nuclear power station" and "corrective action

was taken to correct these deficiencies, and inspection and surveillance programs established to prevent their recurrence."

Very truly yours,

W. L. Stallings
for

Stanley Ragone
Senior Vice President

cc: Director, Division of Reactor
Inspection Programs

PROPRIETARY

Virginia Electric and Power Company

FIRE PROTECTION INSPECTION
SURRY POWER STATION-APRIL 2, 1975

The following is a partial list of deficiencies in the fire protection and prevention program which is submitted as a result of an inspection by Nuclear Energy Property Insurance Association on April 2, 1975:

1. The reason for the use of cyclohexane should be determined. If it is necessary that cyclohexane be used, it should all be kept in a single area outside of the building at least 50 feet from all buildings and pertinent structures. If its use is not required, it should be removed from the site.

2. Three gas cylinders were found against the northeast corner of the Boiler House in a non-permanent arrangement. If these cylinders are necessary and if they are to be used, a permanent arrangement should be made in an area not exposed to truck traffic. Also, the hydrostatic tests of the cylinders were found to be outdated. Properly dated cylinders should be used.

3. There was an excess number of people in the Control Room. During operation it should require only three to four people in this room; however, there were thirteen during this visit.

4. Several gas bottles were found to be propped against the transformers in the switchgear yard. These should be removed.

5. The arrangement for the filling of nitrogen bottles in the area between the No. 2 Containment and the Service Building is unsatisfactory. The trailer bringing the nitrogen should have its wheels chocked, and the lines running from the trailer to the bottles should be made a permanent arrangment. As is, trailer is not chocked and the feed lines from the trailer to the bottles is strung around ladders, over stairways, etc.

6. Guards should be installed around the piping leaving the base of the suction tank to the fire pump. This should be done as heavy equipment is now being parked beside these lines and it is quite possible that this equipment could destroy the lines.

7. Heat collectors for the automatic sprinkler heads at the first level in the No. 2 Turbine Building should be provided. As is, no heat collector is on the head aside from the typical deflector.

8. Trash should be removed from the Turbine Oil Room. It was found during the inspection that the room had been swept, but that all trash had been placed in plastic bags and the plastic bags left in the room. Anytime this room is cleaned and swept, it should be immediately cleared of all trash.

9. Plastic was found draped from the ceiling in the Switchgear Room beside the Cable Room. This plastic seemed to serve no function and should be removed.

10. Several barrels of plastic rods were found on the floor of the basement of Building 2. These rods should be removed.

11. Several of the pump header valves were cracked. These should be replaced.

12. An oil spray film had accumulated on the wall of both turbine buildings. It is understood that this situation is to be immediately cleaned and corrected.

13. Post indicator valves 41, 42, 69, 71, 80, 91, 92 had broken seals and had not been replaced with white seals.

14. Post indicator valve 65 found in closed position-valve was opened during course of inspection-further comment will be made by NEPIA's Hartford Office.

15. Post indicator valve 57 was bent and inoperative-apparently hit by truck-maintenance work order MR52002708 has been assigned for repair.

16. Post indicator valve 80 found bent and loose in ground. Valve should be repaired immediately.

17. Hose House in #1 Safeguard Area broken up beyond repair-impossible to operate hydrant.

18. A number of hose houses were not properly stocked, or contained hose with no couplings.

19. Unsecured compressed gas cylinders were found in several areas of the plant. Some were without valve caps.

20. 15# carbon dioxide extinguisher found behind Control Room panel for #2 Unit. Had not been inspected since March, 1973.

21. A 15# carbon dioxide extinguisher (#42) found with horn removed, and an adapter attached to end of hose-safety pin had been removed-We were informed this unit had been used by General Electric to purge a piece of equipment.

22. Hose Rack (FH#11) should be relocated and new pin rack installed-present rack is in position to get acid spills-hose has been destroyed several times.

23. Cigarette butts were found behind Control Room panel for #2 Unit. Smoking should not be permitted in this area.

24. Post indicator valves (4) on west side of Fire Pump House (numbered IWT-313, etc) should be painted a color other than red, if they are not a part of main fire water loop.

25. Waste oil drums blocking 1/2 of east gate should be moved to a more suitable location.

26. Dry chemical extinguisher (#1) need recharging.

888.85 PROPRIETARY

Virginia Electric and Power Company

PERIODIC TEST CRITIQUE
SURRY POWER STATION
VIRGINIA ELECTRIC AND POWER COMPANY

PERIODIC TEST NO: 1	TO BE PERFORMED BY: 2	UNIT NO: 3
24.4	Operation Electricians with Technicians Mechanics	1

TEST TITLE: 4

FIRE PROTECTION SYSTEMS

TEST FREQUENCY: 5

MONTHLY

UNIT CONDITIONS REQUIRING TEST: 6

UNIT AT POWER OR SHUTDOWN

TEST PERFORMED BY: 7	DATE COMPLETED 8

TEST RESULTS (TO BE COMPLETED BY PERFORMER OF TEST): 9

1. TEST RESULTS SATISFACTORY ☐

2. THE FOLLOWING PROBLEM(S) WAS ENCOUNTERED (USE BACK OF SHEET FOR ADDITIONAL SPACE).

3. CORRECTIVE ACTION TAKEN OR INITIATED:

4. MAINTENANCE REPORT NO. _____ DATED _____ FORWARDED TO:

☐ INSTR. ☐ MECH. ☐ ELEC. ☐ ENGR. ☐ H P.

FORWARD TO COGNIZANT SUPERVISOR

TEST REVIEWED BY COGNIZANT SUPERVISOR(S): 10

_____ DATE _____

_____ DATE: _____

COMMENTS: _____

FORWARD TO PERFORMANCE ENGINEER

COMMENT(S) OF PERFORMANCE ENGINEER: 11	STAMP. 12

VIRGINIA ELECTRIC AND POWER COMPANY
SURRY POWER STATION
UNITS 1 AND 2

FIRE PROTECTION SYSTEMS

1.0 Purpose

1.1 The purpose of this procedure is to assure monthly that all fire protection hose houses, hose stations, doors, extinquishers, and hydrants are properly installed and operational as required by NEPIA.

2.0 Initial Conditions

2.1 None as stated.

3.0 Precautions and Limitations

3.1 The Shift Supervisor shall be informed of any event that may cause alarms in the control room or that may disable any equipment and should be notified when test is finished.

3.2 Any valve, with a red or white seal through the handle that must be moved, should be returned to its normal position as soon as possible and a white seal placed on it.

4.0 Instructions

4.1 Inspect all fire doors (Figures 1, 2, 3, 4).

4.1.1 Verify that CO_2 blow-away or fusible links or hydraulic dampers are properly installed.

4.1.2 Door is closed.

4.1.3 Verify that open doors are able to close automatically should the need arise (i.e. - no pipes, blocks, trash, etc are blocking their closure, and door is not wired open)

4.1.4 Initial fire door checklist as each door is checked verifying proper inspection.

4.0 Instructions (continued)

4.2 Inspect all hose racks (Figures 5, 6).

4.2.1 Refer to diagram and listing for all locations.

4.2.2 Assure that each station has clean, dry hose with no signs of holes or wear.

4.2.3 Verify the presence of a hose wrench and nozzle for each station.

4.2.4 Initial listing after each station is checked verifying proper inspection.

Hose Rack Checklist

Fire Hose	Location	Initials
1.	Col. C-6 Turbine Floor	
2.	Col. C-3 Turbine Floor	
3.	Col. B-3 Turbine Floor	
4.	Col. B-6 Turbine Floor	
5.	Col. B-9 Turbine Floor	
6.	Col. B-11 Turbine Floor	
7.	Col. B-14 Turbine Floor	
8.	Col. B-17 Turbine Floor	
9.	Col. Z-17 Turbine Floor	
10.	Col. C-14 Turbine Floor	
11.	Col. C-12 Turbine Floor	
12.	Col. C-7 Mez. Level	
13.	Col. B-8 Mez. Level	
14.	Col. C-15 Mez. Level	
15.	Col. B-16 Mez. Level	
16.	Col. C-10 Turbine Basement	
17.	Col. B-13 Turbine Basement	
18.	Col. B-15 Turbine Basement	
19.	Col. Y-17 Turbine Basement	
20.	Col. C-16 Turbine Basement	
21.	Col. C-13 Turbine Basement	
22.	Col. C-8 Turbine Basement	
23.	Col. Y-9 Turbine Basement	
24.	Col. B-7 Turbine Basement	
25.	Col. B-5 Turbine Basement	
26.	Col. X-1 Turbine Basement	
27.	Col. C-2 Turbine Basement	
28.	Col. C-5 Turbine Basement	
29.	Rear Door of Maint. Shop	
30.	Store Rm.	
31.	Corridor Ent. Main Office	
32.	Corridor South End Main Office	
33.	Corridor Turbine Bldg. Near Col. C-11	

Hose Rack Checklist (Cont'd)

Fire Hose	Location	Initials
34.	Corridor Turbine Bldg. Near Col. C-13	
35.	Corridor to H.P. Lab.	
36.	East Wall Boiler Rm.	
37.	Corridor from H.P. to Aux. Bldg.	
38.	Aux. Bldg. Elev. 2'0" behind barrier at foot of stairs North East	
39.	Aux. Bldg. Elev. 2'0" near Boron Liquid Evap.	
40.	Aux. Bldg. Elev. 2'0" near MOV 1867A	
41.	Aux. Bldg. Elev 13'0" near Elevator	
42.	Aux. Bldg. Elev 13'0" North West near steps to 2'0" Elev.	
43.	Aux. Bldg. Elev. 13'0" North East near steps to 2'0" Elev.	
44.	Beyond M.C.C. Ent. to Aux. Bldg. 27'6" Elev. East Wall	
45.	East Wall Aux. Bldg. 27'6" Elev.	
46.	West Wall Aux. Bldg. 27'6" near #1 Steam Gen.Blowdown Tank	
47.	Aux. Bldg. Elev. 27'6" near Col. near Elev.	
48.	Aux. Bldg. Elev. 45'10" at Elevator.	
49.	Aux. Bldg. Elev. 45'10" Security Door Ent. to #1 Containment	
50.	Aux. Bldg. Elev 45'10" near Entrance to #2 Containment	
51.	Aux. Bldg. Elev. 45'10" on East Wall Storage Area	
52.	Fuel Bldg. Rear Service Door	
53.	Fuel Bldg. foot of stairs near M.C.C. 1B1-1.	

4.0 Instructions (continued)

4.3 Inspect all CO_2 and Dry Chemical Bottle Stations (Figures 5, 6).

4.3.1 Refer to diagram and listing for all locations.

4.3.2 Visually inspect each station and verify presence of a properly charged extinquisher. Be sure wire seal around handle and pin is intact.

4.3.3 Record serial number and initial listing following check of each station verifying proper inspection

Fire Extinquisher Checklist

Fire Extinquisher	Location	Initials
1.	Col. C-9 Turbine Floor	
2.	Col. C-8 Turbine Floor	
3.	Col. C-6 Turbine Floor	
4.	Col. C-3 Turbine Floor	
5.	#1 Turbine Crane	
6.	Col. B-3 Turbine Floor	
7.	Col. B-6 Turbine Floor	
8.	Col. B-9 Turbine Floor	
9.	Col. B-11 Turbine Floor	
10.	Col. B-14 Turbine Floor	
11.	#2 Turbine Crane	
12.	Col. B-17 Turbine Floor	
13.	Col. C-14 Turbine Floor	
14.	Col. C-11 Turbine Floor	
15.	Col. C-7 Mez. Turbine Bldg.	
16.	Col. C-3 Mez. Turbine Bldg.	
17.	Near Col. B-4 Mez. Turbine Bldg.	
18.	Col. B-8 Mez. Turbine Bldg.	
19.	Between Col. C-11 & C-10 Mez. Turbine Bldg.	
20.	Col. C-15 Mez. Turbine Bldg.	
21.	Col. B-16 Mez. Turbine Bldg.	
22.	Near Col. B-12 Mez. Turbine Bldg.	
23.	Col. C-9 Basement Turbine Bldg.	
24.	Col. Y-10 Basement Turbine Bldg.	
25.	Near Col. B-12 Basement Turbine Bldg.	
26.	Near Col. B-15 Basement Turbine Bldg.	
27.	Near Col. Y-17 Basement Turbine Bldg.	
28.	Near Col. Z-17 Basement Turbine Bldg.	
29.	Col. 2-15 Basement Turbine Bldg.	
30.	Near Col. Z-9 Basement Turbine Bldg.	
31.	Near Col. Z-9 Basement Turbine Bldg.	
32.	Near Col. Y-9 Basement Turbine Bldg.	
33.	Near Col. B-6 Basement Turbine Bldg.	
34.	Near Col. B-4 Basement Turbine Bldg.	

Fire Extinquisher Checklist (Cont'd)

Fire Extinquisher	Location	Initials
36.	Col. C-1 Basement Turbine Bldg.	
37.	Col. C-5 Basement Turbine Bldg.	
38.	Near Col. C-7 Basement Turbine Bldg.	
39.	#1 Unit Turbine Oil Storage	
40.	Ent. Relay Rm.	
41.	Ent. To Maint. Shop	
42.	Ent. To Store Rm.	
43.	Outside Welding Shop	
44.		
45.	Wall of Store Rm. Office	
46.	Rear Ent. To Store Rm.	
47.	Corridor near Ent. Main Office	
48.	Corridor South End Main Office	
49.	South Wall Control Rm.	
50.	West Wall Control Rm.	
51.	East Wall Control Rm.	
52.	Ent. #1 Computer Rm.	
53.	Ent. #2 Computer Rm.	
54.	Ent. To Instrument Shop	
55.	H.P. Count Rm.	
56.	H.P. Environmental Lab.	
57.	H.P. Chemical Lab.	
58.	H.P. Chemical Lab.	
59.	H.P. Environmental Lab.	
60.	H.P. Environmental Lab.	
61.	H.P. Lab. Store Rm.	
62.	Ent. To #1 Diesel	
63.	Outside Exit #1 Diesel	
64.	Ent. To #2 Diesel	
65.	Outside Exit #2 Diesel	
66.	Outside Exit #3 Diesel	
67.	Ent. To #3 Diesel	
68.	Boiler Rm. Door	
69.	Aux. Bldg. Elev. 13'0" West Wall	
70.	Rear Ent. Aux. Bldg.	
71.	Aux. Bldg. Elev. 27'6" near MCC 1A2-1	
72.	Ent. To Aux. Bldg.	
73.	Aux. Bldg. Elev 45'10" near Elevator	
74.	Ent. To #1 Containment	
75.	Ent. To #1 Containment	
76.	Ent. To #1 Containment	
77.	Aux. Bldg. Elev. 45'10" Ent. To Spent Fuel Bldg.	
78.	Ent. To #2 Containment	
79.	Ent. To #2 Containment	
80.	Ent. To #2 Containment	
81.	Fuel Bldg. Door To Aux. Bldg.	
82.	Fuel Bldg. By R.S. Door	
83.	Fuel Bldg. 27' Level	
84.	Fuel Bldg. By MCC 1B1-1	

Fire Extinquisher Checklist (Cont'd)

Fire Extinquisher	Location	Initials
85.	Fuel Bldg. By MCC 1B1-1	
86.	Ent. To #1 Cable Vault	
87.	Top of Stairs Above #1 Cable Vault	
88.	Ent. To Refrig. Rm.	
89.	Ent. To #2 Cable Vault	
90.	Ent. To #1 Safeguard	
91.	Top of Stairs Above #2 Cable Vault	
92.	Safeguard	
93.	#1 Safeguard South Wall	
94.	Ent. #1 Valve Pit	
95.	None	
96	West Gate Guard House	
97.	#1 Valve Pit	
98.	#1 Vac. Prime House	
99.	Boron Recovery House	
100.	Decon. Bldg.	
101.	Decon. Bldg.	
102.	#2 Vac. Prime House	
103.	Fire & Domestic Water Pump House	
104.	Fire & Domestic Water Pump House	
105.	Fire & Domestic Water Pump House	
106.	Low Level Sw. Rm.	
107.	Emer. Ser. Wt. PPS Low Level Intake	
108.	Low Level Vac. Prime House	
109.	500 KV House SW. YD	
110	230 KV House SW. YD	
111.	230 KV House SW. YD	
112.	G.T. 251	
113.	Gas Turbine 251	
114.	Gas Turbine 251	
115.	Gas Turbine 191	
116.	Gas Turbine 191	
117.	Gas Turbine 191	
118.	Gas Turbine 191	
119.	Training Bldg.	
120.	Temp. Fuel Bldg. Storage	
121.	Temp. Fuel Bldg. Storage	
122.	Temp. Fuel Bldg. Storage	
123.	Fuel Oil Pump House (Pilot Bottle)	
124.	Emerg. Serv. Water P.P. House (Pilot Bottle)	
125.	251 G.T.	
126.	9' Level Aux. Bldg.	
127.	191 G.T. Fixed Dry Chemical	
128.	#2 Safeguards Valve Pit	
129.	#2 Safeguards Valve Pit	
130.	#2 Safeguards Valve Pit	
131.	#2 Safeguards Valve Pit	
132.	#2 Safeguards Valve Pit	

4.0 Instructions (continued)

4.4 Inspect all Hose Houses (Figure 7).

4.4.1 Refer to diagram for locations of all hose houses.

4.4.2 Verify that each hose house has, as a minimum, the following equipment.

1-2-1/2 to 1-1/2" Adapter
2- Underwriters' play pipes & brackets
1- Underwriters' play pipe holder
1- fire axe and brackets
1- crowbar and brackets
1- extra hydrant wrench (in addition to wrench on hydrant)
4- coupling spanners
2- hose and ladder straps
2- 2.5 inch hose washers (spares)
100 Ft of 1-1/2" Fire Hose with Couplings
200 Ft of 2-1/2" " " "

4.4.3 Initial listing as each station is checked verifying proper inspection.

Hose House	All Equipment Present Initials
1	_____
2	_____
3	_____
4	_____
5	_____
6	_____
7	_____
8	_____
9	_____
10	_____
11	_____
12	_____

5.0 Acceptance Criteria

5.1 Any abnormalities in any of the systems should be reported to the Shift Supervisor immediately and the critique sheet utilized to note the abnormal condition.

5.2 Following a general housekeeping inspection, any fire hazard should be reported to the Shift Supervisor and the critique sheet utilized to note the hazardous condition.

5.3 The Station Fire Marshall should be notified immediately of any abnormal conditions or fire hazards with a written memorandum.

Completed By: _____

Date: _____

APPROVED BY: [signature]
Station Manager & Chairman Station
Nuclear Safety & Operating Committee

DATE: 7/21/75

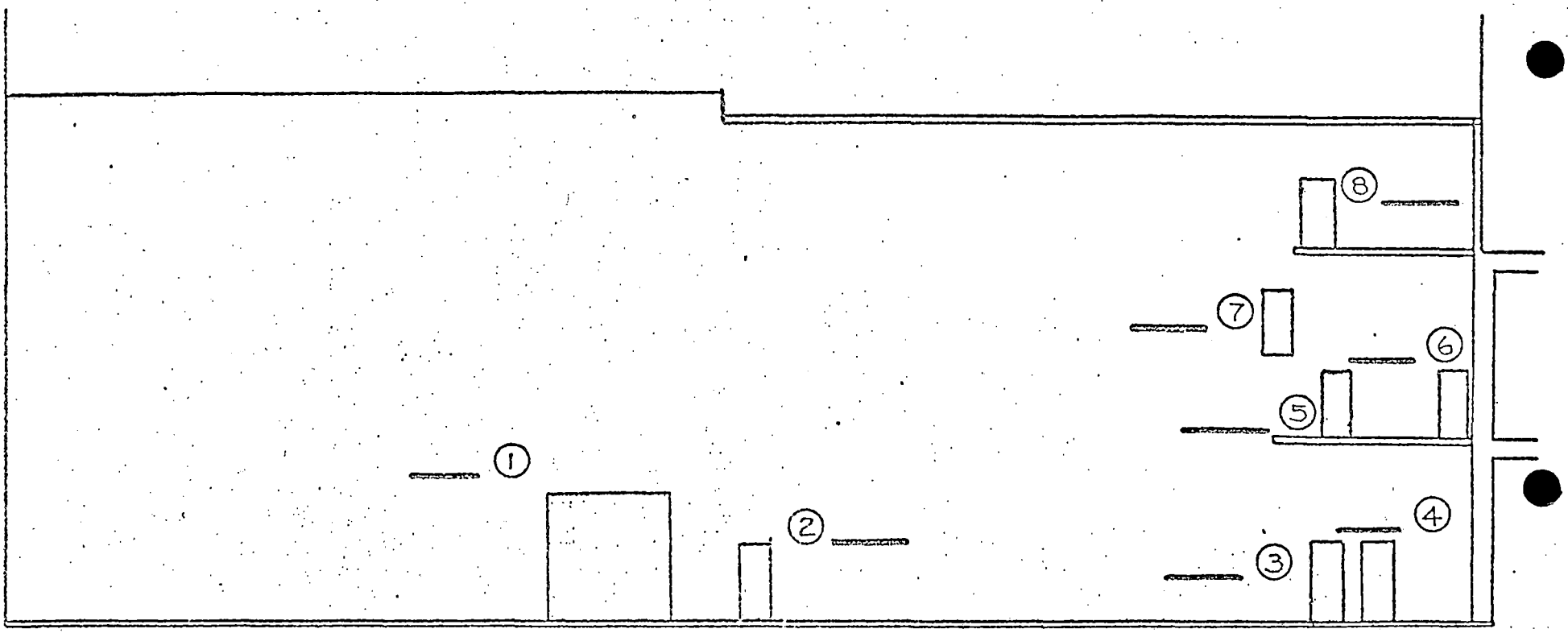
COMMEND APPROVAL: [signature]

TE: 7-18-75

ST OF EFFECTIVE REVISIONS

SECTION	DATE
1.0	7-21-75
2.0	5-30-75
3.0	5-30-75
4.0	7-21-75
5.0	7-21-75
Figure 1	7-21-75
Figure 2	7-21-75
Figure 3	7-21-75
Figure 4	7-21-75
Figure 5	7-21-75
Figure 6	7-21-75
Figure 7	7-21-75

FIRE DOOR CHECKLIST



TURBINE BUILDING FIRE WALL

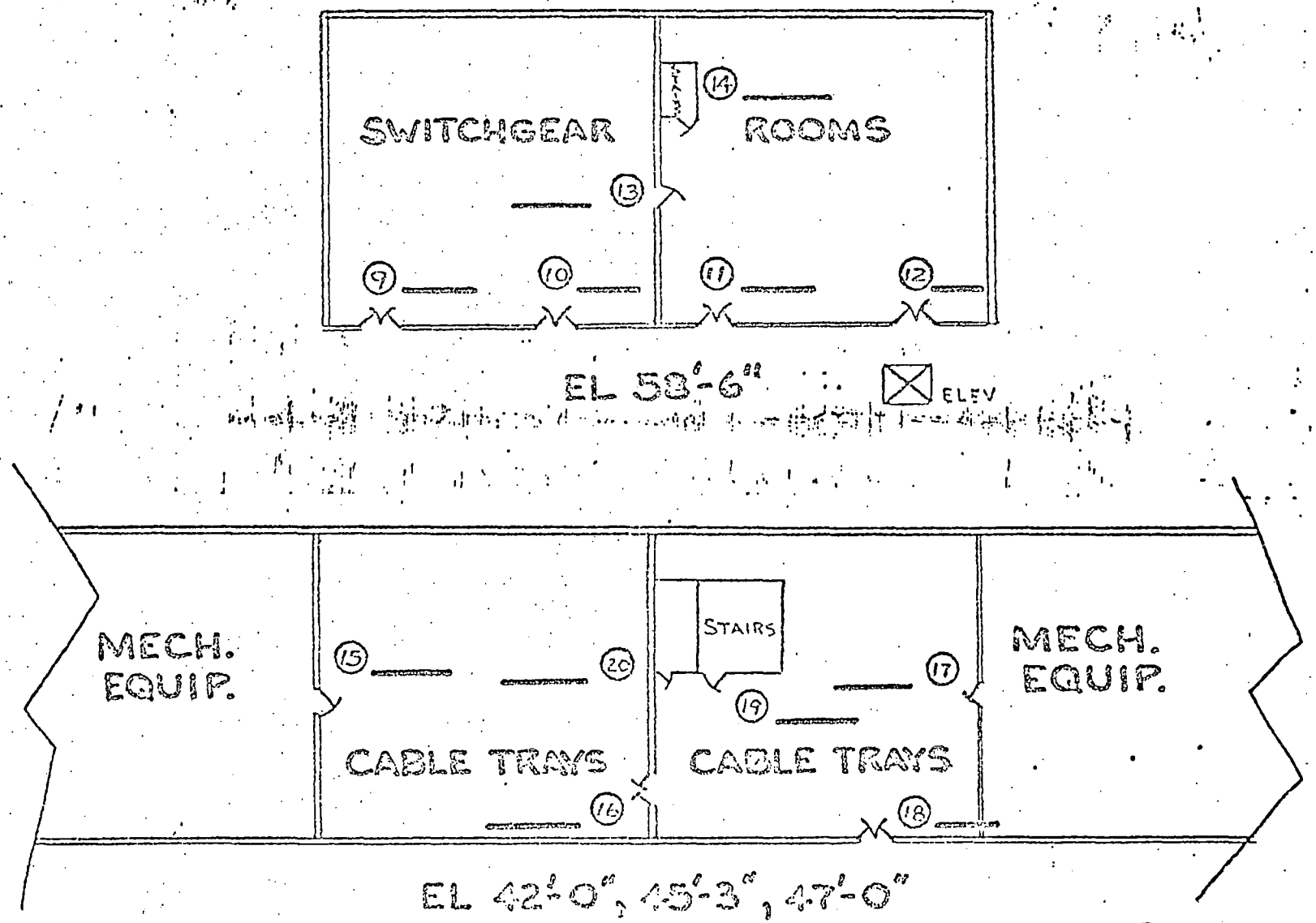
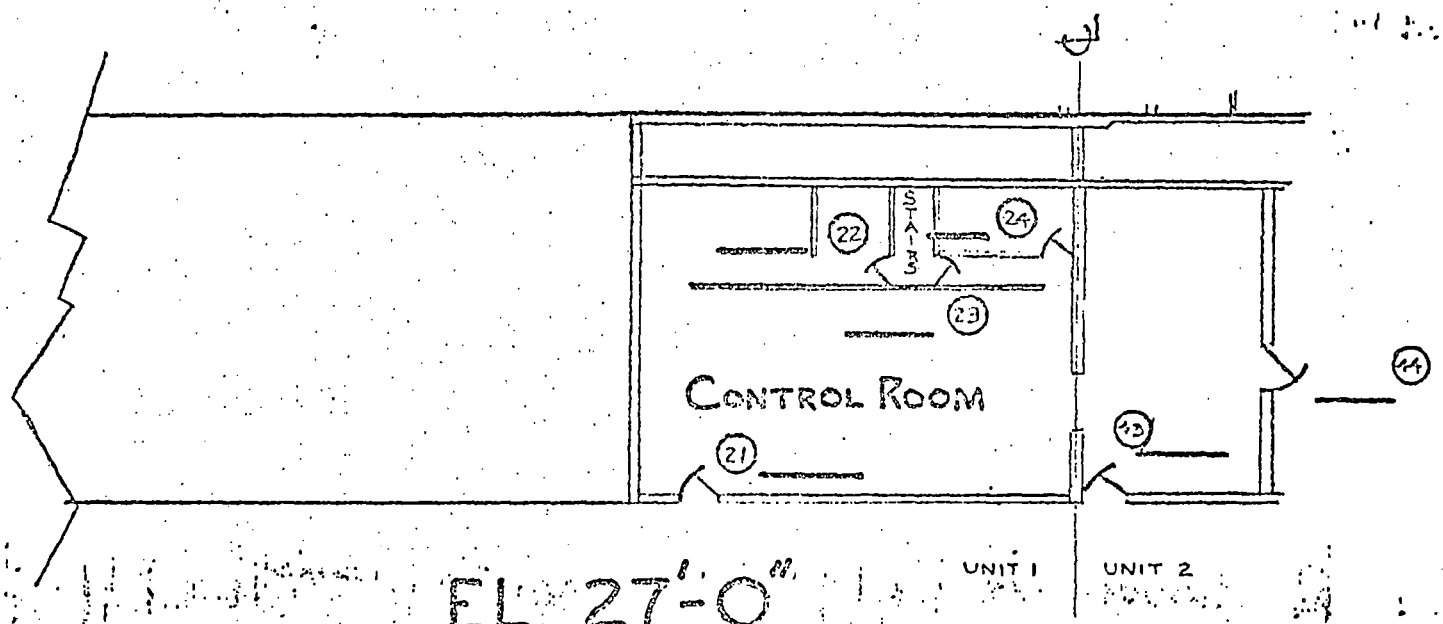
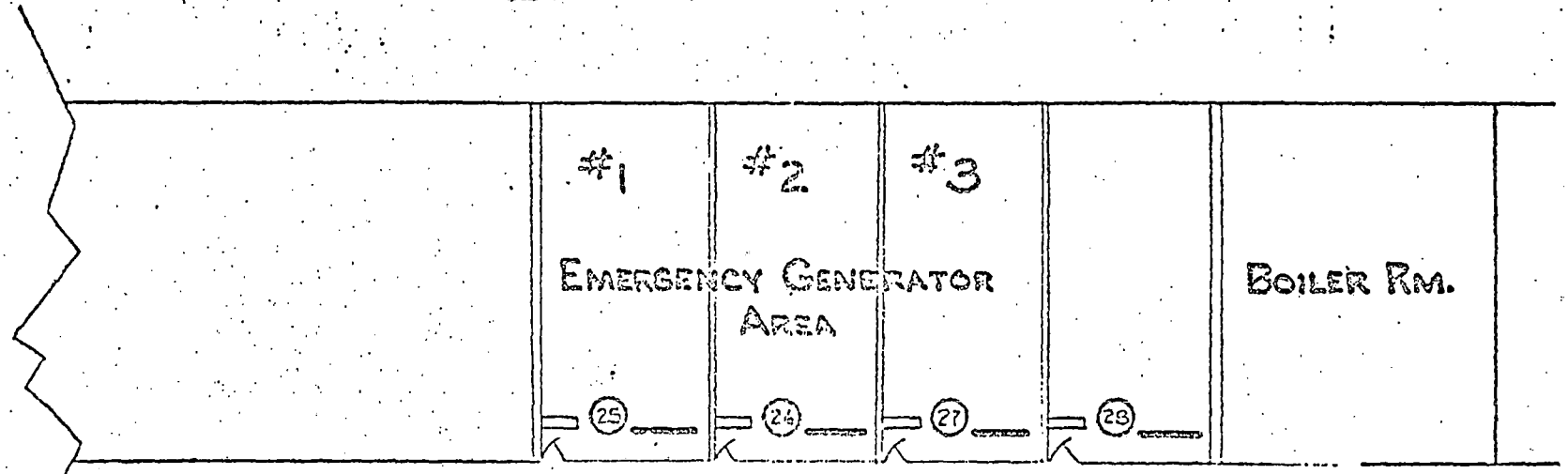


FIGURE 2

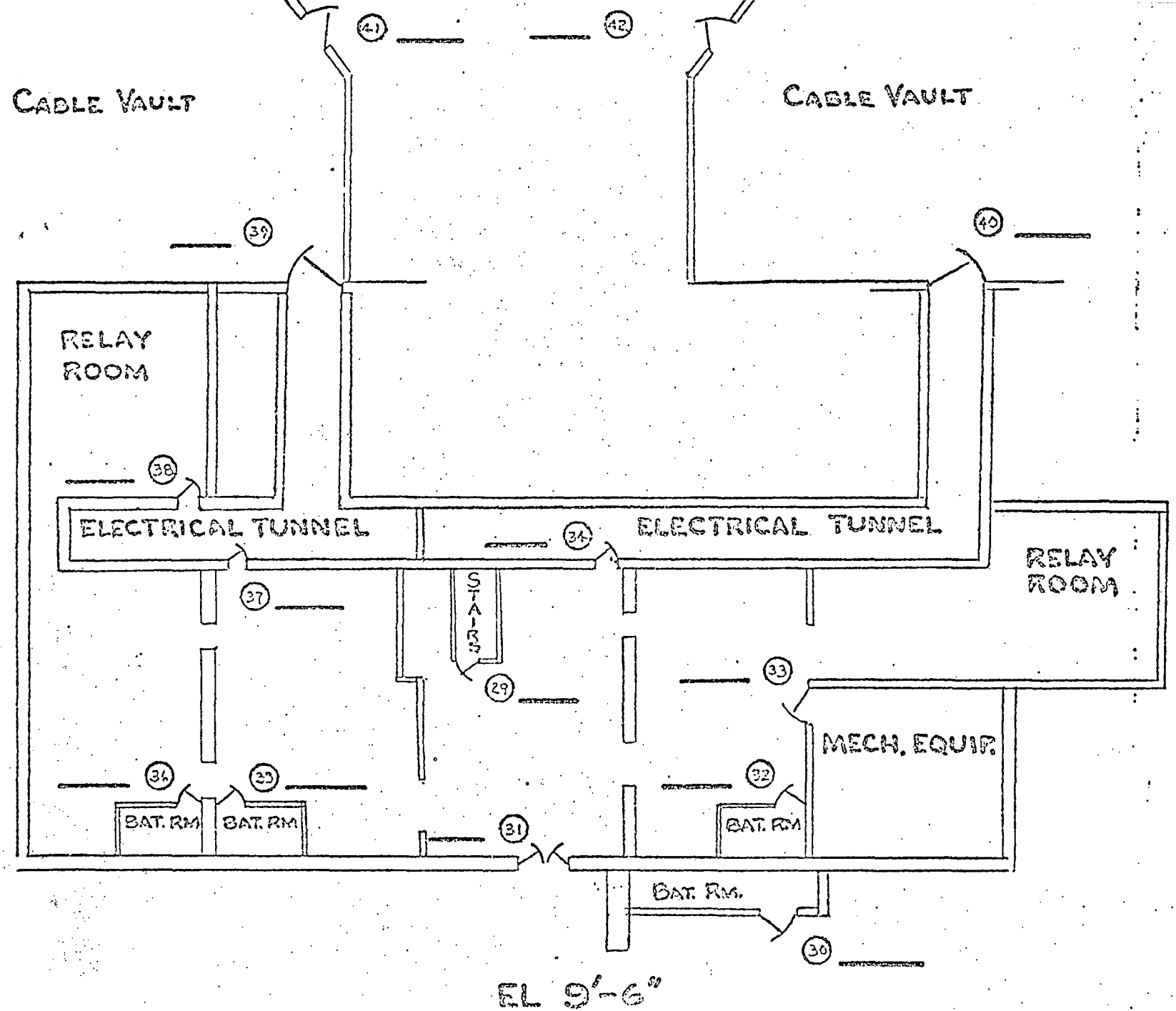
SHEET 2 OF 4





SHEET 3 OF 4

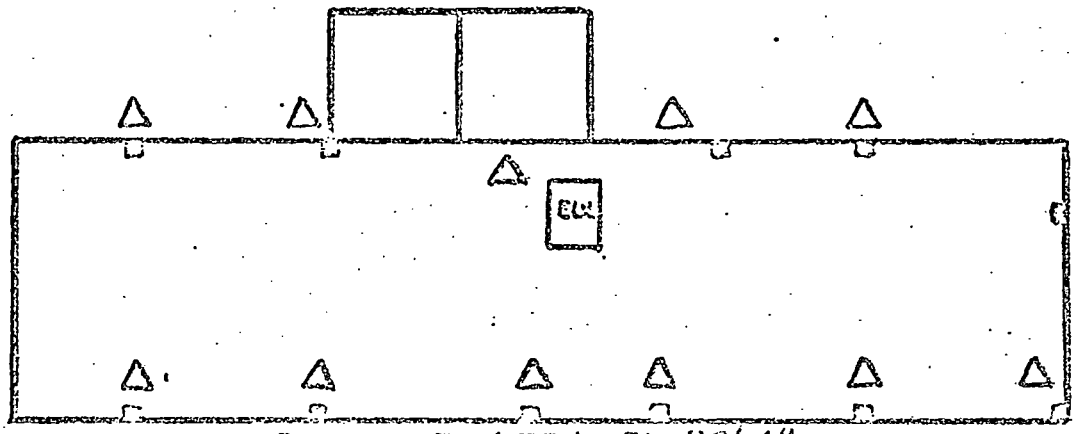
1-21-5


CABLE VAULT
CABLE VAULT
41
42
39
40
RELAY ROOM
38
ELECTRICAL TUNNEL
34
ELECTRICAL TUNNEL
RELAY ROOM
37
STAIRS
29
33
MECH. EQUIP.
36
35
32
BAT. RM
BAT. RM
BAT. RM
31
BAT. RM.
30
EL 9'-6"

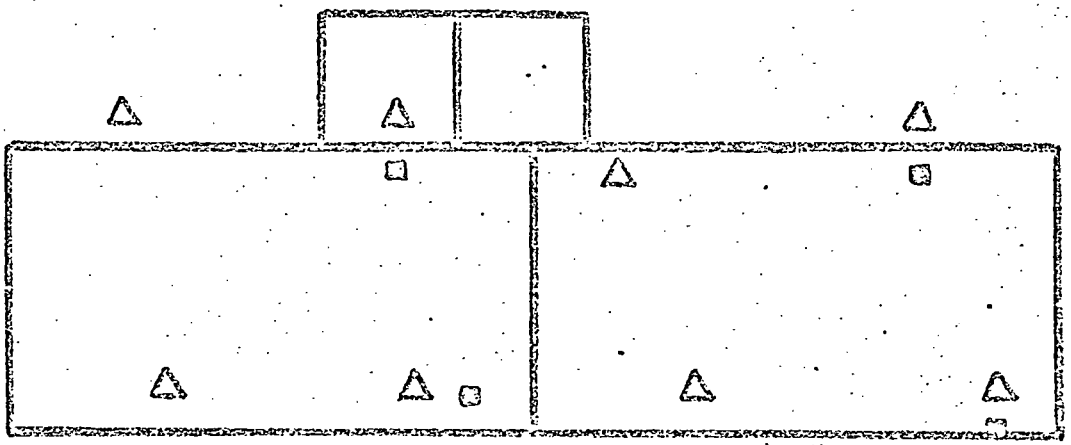
SHEET 4 OF 4

7-21-75

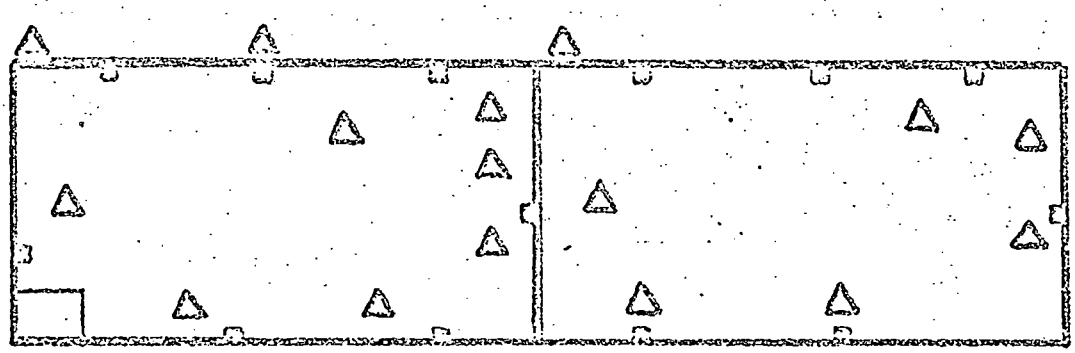
HOSE RACK & EXTINGUISHER CHECKLIST



TURBINE AREA EL 90'-6"



MEZZANINE LEVEL EL 55'-0"

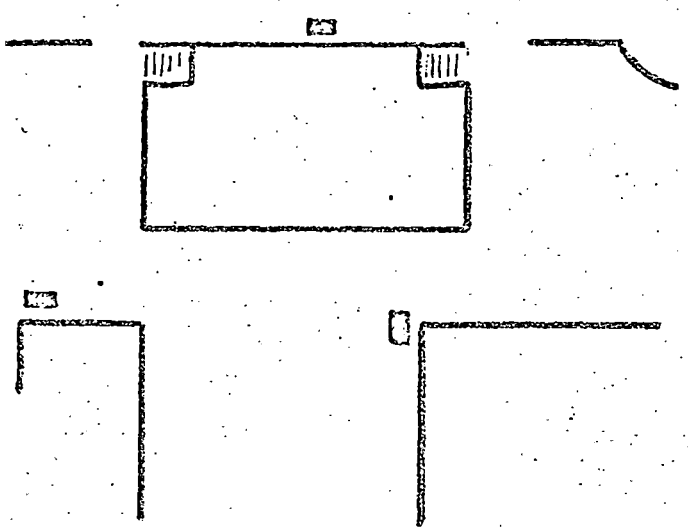


EL 9'-6"

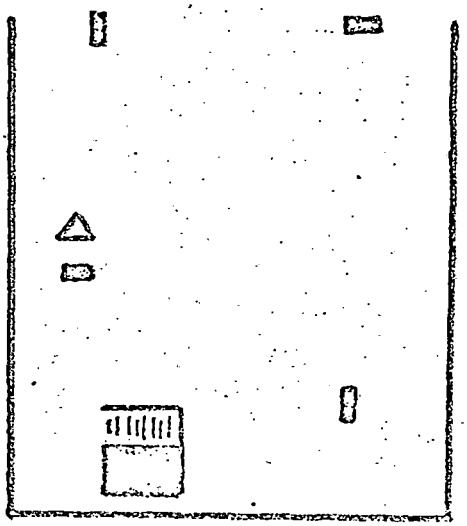
□ HOSE RACK

△ EXTINGUISHER

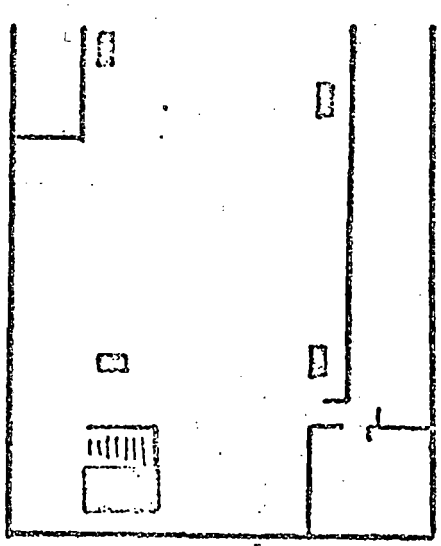
AUX. BUILDING



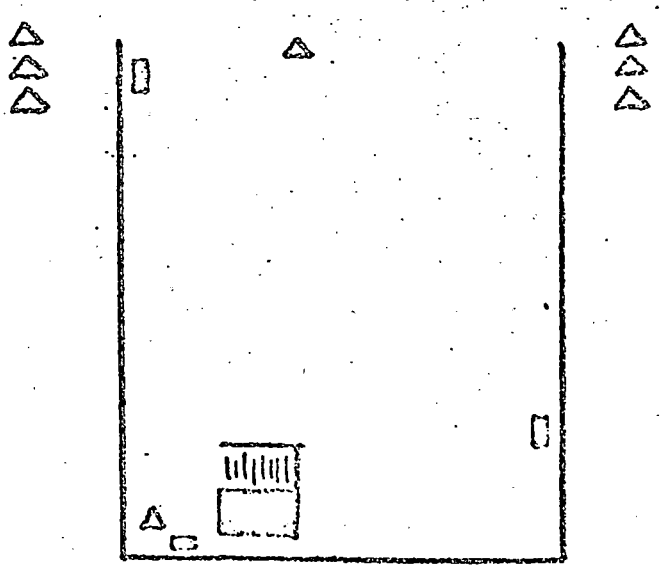
EL 2'-0"



EL 14'-9"

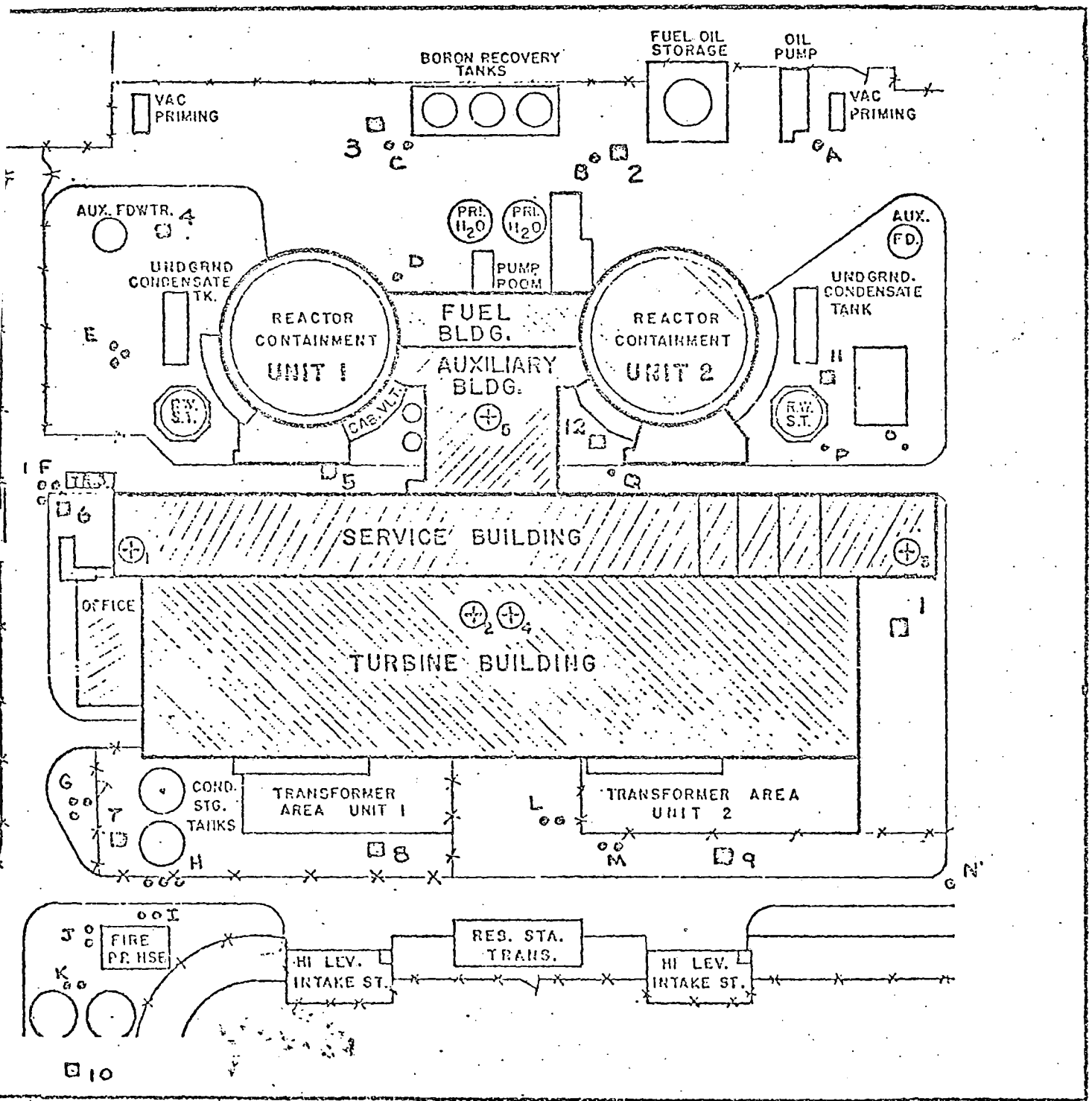


EL 27'-6"

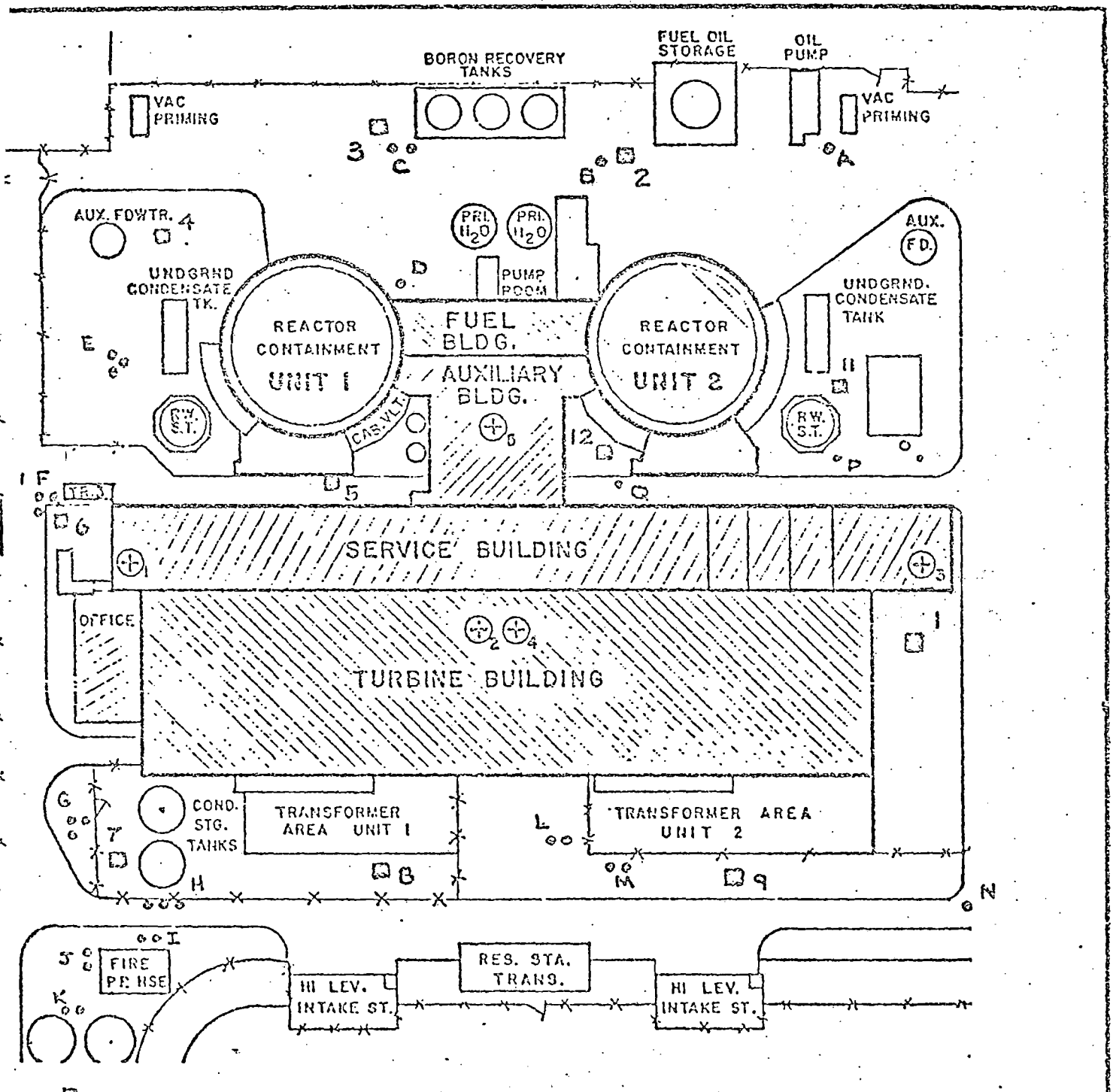


EL 45'-10"

HOSE HOUSES & OUTSIDE POST INDICATOR VALVES



HOSE HOUSES & OUTSIDE POST INDICATOR VALVES



PROPRIETARY

NUCLEAR ENERGY LIABILITY | PROPERTY INSURANCE ASSOCIATION

The Exchange, Loft A, Bldg. 3, Suite 323
Farmington Ave., Farmington, Conn. 06032

Property of VIRGINIA ELECTRIC & POWER CO.
SURRY POWER STATION
SURRY CO., VA. 23883

CONFIDENTIAL
This report should be made available only to authorized persons.

File No. N-171 (75-0)
Key File No. N-171
By M.J.Hudson
Date Sept.2,4,1975 Hrs.21

Virginia Electric and Power Company

ERVICE REPORT
erred with Mr.
o Sweeney, Mgr.
hells, Elec. Supt.

SPRINKLERS: Are adequate.
VALVES: Are sealed.
WATERFLOW ALARMS: Local & annunciator in Control Room.
SUPERVISORY COVERS: Waterflow, pumps & part valves&carbon dioxide
PLANT OPERATION: 7 days, 24 hours

WATCHMAN SERVICE: Is satisfactory
ROUNDS: Hourly recorded idle periods
PORTABLE FIRE EQUIPMENT: Is adequate.
CORDED SELF-INSPECTIONS: Good
PRIVATE FIRE BRIGADE: Fair
PUBLIC FIRE DEPT: Poor-Vol.
WATER SUPPLIES: Good
MERGENCY ORGANIZATION: Good
OACTIVE WASTE HANDLING: Good
CRITICALITY CONTROL: Good

IMPAIRMENT NOTIFICATION: Given RED TAGS USED? Yes
WELDING & CUTTING: TAGS USED? No
ELECTRICAL EQUIPMENT: Good
MAINTENANCE: Good
CLEANLINESS: Good
SMOKING: Is controlled.
NATURE OF RISK: Nuclear power plant
PRODUCT: Electrical power

CONSTRUCTION: 1-4 sto. 34% fire resistive, 32% noncomb., 34% combustible, metal deck roof
NUCLEAR CONTAINMENT: Good
SPECIAL HAZARDS: Well cared for. Steam turbines, hydrogen cooled generators.

AREA MONITORING RECORDS: Good
RADIOISOTOPE HANDLING: Good
REACTOR TYPE: Pressurized water reactor
THERMAL POWER RATING: 2441 megawatt each

there are any questions concerning the recommendations on this report or you have alternate solutions for them, please contact us.

A satisfactory program on self-inspection of fire equipment has now been initiated. Fire protection equipment was found to be in good working order, with necessary equipment found in all areas. Housekeeping throughout the plant site was found to be good. Recommendation 73-1 is therefore removed from this report.

Regarding Recommendation 73-4, it is understood that the locations of the emergency shutdown panels for both Units 1 and 2 are in the rooms referred, thereby precluding provision of total flooding CO2. It is further understood that design changes will be requested which will make possible the installation of adequate automatic fire protection in these rooms.

During the testing of the deluge systems, it was found that the alarm annunciator on the main control panels for both Units 1 & 2 which signals a fire to the plant operator, is wired on a parallel circuit. Thus, once a fire signal is received at the main control panel, no other fire signals can be received. As the panel which does

WATER SUPPLIES	TEST RESULTS					
	G.P.M.	Flow Location	Static	Resid.	Pres. Location	Tested:
No public water						
Fire Dept. Conn. None						

HEAD RATING	DRIVE	AUTO. MAN.	SUCTION SOURCE	Shutoff Pres.	G.P.M.	Disc. Pres.	R.P.M.	SUCT. PRES. / SLIP	Cond.	Tested:
106	Elec.	Auto.	2- 300,000 gal.w/ 288,000 gal. reserved with 400 gpm	150	2660	132	1770	14	Good	4/21/75 WJH
106	Diesel	Auto.		142	2560	120	1740	13	"	

pinpoint activation or used for activation of fire protection equipment is behind the main control panel, it would now be possible for the spread of fire to go unchecked after the initial alarm is received. This presents a hazardous situation since three of the deluge systems on each unit do not activate automatically, but rather by a control room button. It is understood that a procedure charge will be made whereby a competent employee will be assigned to stay by the smaller fire annunerator panel to insure immediate discovery of subsequent fire signals after an initial signal has alarmed.

A 20' x 20' Office has been erected on the turbine operating floor. The office is of completely noncombustible construction, but occupancy is to be plans and drawings during shutdowns. Sprinklers are not to be provided, but extinguishers are. This is acceptable.

New Recommendations - None

Recommendations Continued from Previous Report

71-15 A private fire brigade should be organized, trained and drilled at regular intervals. (In process - formal classes to begin 9/22/75)

73-2 (Revised 9/8/75) Electronic tamper switches should be provided for the following valves:

a - All OS&Y valves on the deluge headers which are not now supervised.

b - The two OS&Y valves on the riser in the boiler room.

At present, it would be possible to complete shutoff water to either deluge header without receiving an alarm. This is true of boiler house sprinklers and hose also (Engineering design change requested)

73-4 Extend the Cardox CO2 system to automatically cover the 4160 v. Switchgear Rooms at the 9'6" level adjacent to the cable tunnels for Units 1 and 2. (Design change request to be made; emergency shutdown panel in room at present.)

PROPRIETARY
Virginia Electric and
Power Company

18 Aug 1975

Memo to file. regarding Audit 75-18

1. Called Mr. Tower and asked him to speak with Mr. Sweney regarding firm commitments on audit corrective action.

2. Spoke with Mr. Sylvia regarding some subject. He stated he will call Mr. Sweeney on this today

John Leonard

AUDIT REPLY FORM

Date: 8-21-75

Supervisor - Quality Assurance, Operations and Maintenance

Senior Member - Station Quality Assurance Staff

: R. E. Nicholls Title: Electrical Maintenance Supervisor

T NUMBER: 75-18 : SUBJECT: Fire Protection and Prevention Practices

Recommendations not accepted requiring resolution by Corporate Management:

Number	Reason

NOTED AUG 29 1975 NRC

Recommendations Accepted and Implemented:

Number	Date Implemented	Number	Date Implemented
1	8-21-75	7	8-25-75
2	8-21-75	8	8-18-75
3	8-18-75	9	8-21-75

AUDIT REPLY FORM

Recommendations Accepted and Scheduled For Future Implementation:

Number	Scheduled Date	Number	Scheduled Date
4	9-22-75		
5	9-22-75		
6	9-22-75		

Signature

If additional space is needed, use a blank sheet following the same format as used in this form.

Recommendations:

1. When completed the inspection package will be sent to the Supervisor Quality Assurance Surry Power Station.
2. Operations Department to update AP-20 and repair procedure holders.
3. All deficiencies as noted by E.B. Rhodes memo June 13, 1975, have been assigned to appropriate department heads for action.
4. A system to correct any noted descrepancies and to assure equipment reliability is being formed and prepared for implementation.
5. Station Emergency Plan will be up-dated to reflect future changes.
6. Formal training will start September 22, 1975, assisted by the State Fire Training Services Department.
7. A study is being conducted on the flammability of Scotch 27 which includes a mock-test.
8. A study to modify existing louvers is in progress.
9. Turbine Building ventilation louvers will automatically close when the fans are shut off. It has been found that the louver system needs repair. Maintenance Report S1-4883 has been issued to see that the necessary repairs are made.

PROPRIETARY

Virginia Electric and Power Company

OPERATIONS AND MAINTENANCE

QUALITY ASSURANCE AUDIT REPORT

ATTACHMENT 1

Audit Location: Surry Power Station

Date: 15 Oct. 1975

Audit Subject: Fire Protection & Prevention Practices
Followup on Audit 75-18

Audit Number: 75-18A

Referenced Documents:

Audit Report 75-18 and Station Replies

NOTED OCT 16 1975 L. Perkins

Check List Required: X YES, ____ NO

NOTED OCT 20 1975 S.R.

Summary of Audit Procedures:

Discussions were held with Mr. Bob Nicholls, Station Fire Marshall, and with Mr. W. F. "Chuck" Conner, Ass't Fire Marshall using the guideline of ACL-27. Selected items were spot checked. An exit critique was held with Mr. Bob Nicholls, Mr. W. F. Conner, and Mr. R. E. Morton (System Supervisor of Elec. Maintenance).

Conclusions:

The station has made significant improvement in this area. The assignment of Mr. W. F. Conner as Ass't Fire Marshall, along with increased management attention, has contributed to this effort.

Recommendations:

Continue efforts to train station personnel in fire protection and establish formal fire brigade.

Continue efforts to develop a PT for firestop inspection.

Provide washdown hoses at selected locations for everyday use so that fire hoses are reserved for their intended function.

Individual(s) Responsible For Corrective Action(s) and Date For Completion:

No reply required to this followup audit. Responsible individuals should continue corrective action as indicated in ACL-27. This area will again be checked after refueling.

DISTRIBUTION:

Station Manager
Supervisor-Quality Assurance, Operations and Maintenance
Senior Member- Station Quality Assurance Staff
Station Quality Assurance File
Supervisor of the area audited
Secretary- Station Nuclear Safety and Operating Committee
Supervisor- Nuclear Operations (System Audits Only)
[illegible] (System Audits Only)

Signature of Audit Leader

10-15-75
Date

QUALITY ASSURANCE
OPERATIONS AND MAINTENANCE

PAGE 1 OF 3 AUDIT CHECKLIST ACL- 27

LOCATION: Surry Power Station AUDIT DATE: 14 Oct. 1975

AUDIT SUBJECT: Fire Protection and Prevention Practices
Followup on Audit 75-18

REFERENCE DOCUMENT(S): Audit Report 75-18 and Station Replies
S. B. Foulke, Jr. Memo of Sept. 29, 1975 to D. R. Arter

AUDITOR(S): D. R. Arter APPROVED: Supervisor-QA, O & M

1.0 SCOPE:
This document sets forth the minimum requirements for a quality audit on Fire Protection and Prevention Practices Re-audit

2.0 Response to Audit 75-18 recommendations:

2.1 Has the inspection of firestops undertaken to satisfy NRC commitments been properly documented: (Item #1, Audit 75-18)
Remarks:
Yes
The inspection itself was not documented; however, resulting corrective action was documented on EMP-C-FP-23 for sleeve or hole Nos. C-3(9-5-75), C-4 (9-5-75), D-13 (9-8-75), D-15 (9-8-75), and N-3 (9-9-75).
See Attached Exhibit A.

2.2 Has procedure AP-20 at the auxiliary shutdown panels been updated to reference AP-17 vice EP-11? Unit 2-yes, Unit 1-no
Have the procedure holders been repaired? Yes
Remarks:
Unit 1 had an outdated copy of AP-20 in the holder.
Operations Supervisor notified.

2.3 Has a system been developed to assure the continuing reliability of fire-fighting equipment and the prompt resolution of discrepancies? (Item #4, Audit 75-18)
Remarks: Yes

Mr. W. F. "Chuck" Conner has been designated Ass't Fire Marshall.
PT 24.4 (7-21-75) has been developed to cover inspection of fire doors, hose houses, hose stations, extinguishers, and hydrants.
A weekly fire-prevention inspection program has been developed to locate and identify discrepancies. Maintenance Reports are generated from these discrepancies and signed by the Station Manager.

See Attached Exhibit B.

2.4 Are existing practices on fire-fighting in agreement with the Surry Station Emergency Plan? (Item #5, Audit 75-18)
Remarks:
Yes
The Emergency Plan still refers to "Emergency Operating Procedures" vice AP's; however, the intent is not affected.

2.5 Has a formal training program been developed and implemented for fire-fighting personnel? (Item #6, Audit 75-18)
Remarks:
Yes
An initial group of 22 station individuals attended a five day course conducted by the State Dept. of Education. See Attached Exhibit C. No official fire brigade has as yet been established; however, this will be accomplished within the next four weeks.

2.6 Has a study been conducted on the flammability of Scotch 27 electrical tape? (Item #7, Audit 75-18)
Remarks:
No
This material will be tested at the NAPS prototype firestop test to be accomplished by year's end.

2.7 Have studies been initiated to modify existing louvers in fire boundaries? (Item #8, Audit 75-18)
Remarks:
Yes
Mr. Jerry Olin presently has this under study.

2.8 Have Turbine Building ventilation louvers been repaired to provide automatic closure? (MR SI-4883; Item #9, Audit 75-18)
Remarks:
Not yet
This item is on the Plan-a-log schedule (Item #3188) for accomplishment during the current refueling outage.

3.0 Has necessary corrective action been taken or initiated to correct the deficiencies noted in E. B. Rhodes memo of June 13, 1975? (Item #3, Audit 75-18)
Remarks:
Yes
Mr. W. R. "Chuck" Conner has personally verified corrective action taken or initiated required corrective action through the programs detailed in item 2.3.

4.0 Other Items:

4.1 Has a Periodic Test been developed to provide a scheduled review of firestops? (Item 2.d, ACL-21, Audit 75-18)

Remarks:

This test is under development by Mr. Jerry Olin in three phases:

A. Locate and identify all firestops
B. Restore integrity - EMP-C-FP-23 refers
C. Develop a PT to check continuing integrity

The PT should be developed within the next four weeks.

4.2 Are Nuclear Energy Liability - Property Insurance Assn (NEL-PIA) impairment cards being used at the Station? (S.B. Foulke, Jr., memo of Sept. 29, 1975)

Remarks:

Yes

FIRST PAGE ONLY

VIRGINIA ELECTRIC AND POWER COMPANY

SURRY POWER STATION

PROCEDURE
FOR

SEALING ELECTRICAL PENETRATIONS OF
PRESSURE BOUNDARIES AND/OR FIRE WALLS

SLEEVE OR HOLE NO. _____

1.0 Purpose

1.1 To provide a guide in sealing off electrical cable sleeves and core drilled holes for pressure boundary and/or fire stop purposes.

2.0 References

2.1 SK-031069A,B and C (Attached)

2.2 Memorandum dated February 10, 1972. (Attached)

3.0 Initial Conditions

3.1 Adhere to applicable radiation protection measures, and if necessary obtain a radiation work permit.

3.2 Notify the Quality Assurance Department at start of job, giving the number and location of sleeve or hole and this procedure number.

4.0 Precautions

4.1 Prior to the end of each work day temporarly seal up the core drilled holes, pipe sleeves thru fire walls and pressure boundaries that were opened.

4.1.1 Fire wall sleeves are sealed by filling the sleeve with asbestos cloth stips to a depth of at least 2 inches.

4.1.2 Pressure boundaries are sealed by filling the sleeves with duxseal NSG red, or equivalent, about 1 inch thick.

MEMORANDUM EXHIBIT B

TO Station Manager

FROM Fire Marshall's Office Surry Power Station

WEEKLY FIRE-PREVENTION INSPECTION

PLANT _____ DATE _____

Instructions to Inspector:

1. Fill out form while conducting inspection.
2. Notify Fire Marshall immediately of any safety related discrepancies.
3. Fill out Maintenance Report to correct any discrepancies and turn in to Fire Marshall for review and disposition with Station Manager.

General Order and Neatness: Good _____ Areas of Fire Hazards _____

_____

_____

Flammable Liquids: Safety cans used? Yes_____ No_____ Areas needing attention _____

_____

_____

Electrical Equipment: Defects noted _____

_____

_____

Smoking Regulations: Locations where violations noted _____

_____

_____

Cutting & Welding: Listed precautions taken? Yes_____ Violations noted___

_____

_____

Fire Doors: Condition _____

_____

Weekly Fire-Prevention Inspection (Con't.) (CONT)

Blocked Open? Yes_____. NO_____ Obstruction? _____

_____

Extinguishers: Missing? No_____ Attention needed (Give location)_____

_____

_____

Inside Hose Stations: In good condition? Yes_____ No_____ Noted discrepancies _____

_____

Yard Hydrants & Outside Hose Stations: Condition Good? Yes_____ No_____

Remarks: _____

_____

ADDITIONAL REMARKS: _____

_____

_____

_____

_____

_____

_____

_____

_____

INSPECTOR'S
SIGNATURE: _____

DATE: _____

MEMORANDUM

O All Department Heads — Surry Power Station

ROM Station Manager — September 18, 1975

The following personnel will attend a Fire Fighting Course during the week of September 22 - September 26, 1975. The course will be held at the Training Center.

A schedule of the Fire Fighting Course is attached.

Electricians	Mechanics	Health Physics	Storeroom
P. Kubler	G. Edward	P. Huntley	A. Pencola
M. Griffin	R. Kerr	C. Folz	
J. Nesbitt	P. Horne		
L. Armentrout	W. Robinson		
W. Kibler			
W. Conners			

Instrument Technicians	Operations
None	H. Miller
	W. Adkins
	S. Lane
	J. Fisher

T. L. Bauer

E. M. Sweeney, Jr.

(CONT)

General Firemanship Course

SURRY NUCLEAR POWER STATION FIRE BRIGADE

Forty hours of approved firemanship training presented in cooperation with Fire Service Training, State Department of Education.

Classes: 8:00 AM - 5:00 PM Place: Training Center

Monday, September 22 - Instructor - John Beaton, Capt., Franklin, Va.

7:30 AM - 8:00 AM	Registration
8:00 AM - 10:00 AM	Organization and Operations
10:00 AM - 1200 noon	Chemistry of Fire; Fire Hazards and Causes
12:00 noon - 1:00 PM	Lunch
1:00 PM - 2:00 PM	Sprinkler Systems
2:00 PM - 5:00 PM	Portable Fire Extinguishers

Tuesday, September 23 - Instructors - Lt. I. B. George, W. H. Lloyd, Va. Beach, Va.

8:00 AM - 12:00 noon	Protective Clothing; Breathing Apparatus
12:00 noon - 1:00 PM	Lunch
1:00 PM - 5:00 PM	Fire Hose Practices

Wednesday, September 24 - Instructors - Same as for Tuesday

8:00 AM - 10:00 AM	Small Tools; Forcible Entry
10:00 AM - 12:00 noon	Ropes
12:00 noon - 1:00 PM	Lunch
1:00 PM - 5:00 PM	Rescue

Thursday, September 25 - Instructor - Lt. Ronald Smith, Va. Beach, Va.

8:00 AM - 10:00 AM	Salvage and Overhaul
10:00 AM - 12:00 noon	Fire Stream Practices
12:00 noon - 1:00 PM	Lunch
1:00 PM - 5:00 PM	LP Gas Hazards; Flammable Liquids

Friday, September 26 - Instructors - Richard Morrison, W. H. Lloyd, Va. Beach, Va.

8:00 AM - 9:00 AM	Forest Fires
9:00 AM - 12:00 noon	Fire Stream Practices
12:00 noon - 1:00 PM	Lunch
1:00 PM - 5:00 PM	Structural Fires

10-16-75

USFS 6570-8 (Rev. 1975) E.M. PAGE

~~Mr. T. L. Perkins~~ JLC

This area has been of interest to you so I thought you would like to see a recaudit.

Basically we are making progress. The station did take our recommendations for action and:

1. Has designated a person whose primary responsibility is this area.
2. Has formally trained 22 men.
3. Has corrected and is correcting physical plant deficiencies
4. Set up a periodic surveillance of firefighting equipment.
5. Developing a PT to maintain firestop integrity.

We will check area again after refueling.

John Leonard

Mr. T. L. Perkins

John Leonard

not J.

PROPRIETARY

Virginia Electric and Power Company

OPERATIONS AND MAINTENANCE

QUALITY ASSURANCE AUDIT REPORT

ATTACHMENT 4

Audit Location: Surry Power Station

Date: 5 Aug. 1975

Audit Subject: Fire Protection and Prevention Practices

Audit Number: 75-18

Referenced Documents: NRC Insp. Report Nos. 50-280/75-7 and 50-281/75-6
Vepco reply to IE Bulletin 75-04
E. B. Rhodes Memo of 13 June 1975 to E. M. Sweeney
Surry Station Emergency Plan

Check List Required: X YES, _____ NO

Summary of Audit Procedures:

The audit was conducted per ACL-21 (attached). Discussions were held with the Supervisor - Electrical Maintenance (Acting), and visual inspections were performed. Audit members were Messrs. D. R. Arter, S. B. Eisenhart and E. B. Rhodes. An exit critique was held with Mr. W. L. Stewart, Operating Supervisor.

Conclusions:

1. Fire prevention practices at the Surry Power Station are marginally satisfactory; actions are being taken in some specific areas to improve this situation.

2. The fire protection system and the pre-planning for fighting a fire is generally unsatisfactory. This must be given priority attention.

Recommendations:

See attached sheet

Individual(s) Responsible For Corrective Action(s) and Date For Completion:

E. M. Sweeney, Jr. - Replies are requested by 22 Aug. 1975

DISTRIBUTION:
Station Manager
Supervisor-Quality Assurance, Operations and Maintenance
Senior Member- Station Quality Assurance Staff
Station Quality Assurance File
Supervisor of the area audited
Secretary- Station Nuclear Safety and Operating Committee
Supervisor- Nuclear Operations (System Audits Only)

Signature of Audit Leader

8-7-75
Date

QUALITY ASSURANCE
OPERATIONS AND MAINTENANCE

PAGE 1 OF 3 AUDIT CHECKLIST ACL-21

LOCATION: Surry Power Station AUDIT DATE: 5 Aug 1975

AUDIT SUBJECT:
Fire Prevention, Work Practices, Material and Procedures

REFERENCE DOCUMENT(S): NRC Insp. Report Nos. 50-280/75-7 and 50-281/75-6
Vepco reply to IE Bulletin 75-04
E. B. Rhodes Memo of 13 June 75 to E. M. Sweeney

AUDITOR(S): D. R. Arter E. B. Rhodes
S. B. Eisenhart

APPROVED: [signature] Supervisor-QA, O & M

1.0 SCOPE:
This document sets forth the minimum requirements for a quality audit on Fire Prevention and Procedures

2.0 NRC INSPECTION REPORT:

a. Have the types of fire stops used at Surry been tested to insure that they will effectively stop a fire? NO
Remarks:
The testing of the fire stops will be performed by constructing a prototype of the firestops used at Surry and subjecting it to heat vs time tests. The tests are to be performed at North Anna in the near future.

b. Have original material and inspection records of fire stops been obtained to verify original construction? Yes
Remarks:
The records were initially unavailable when the NRC Inspector was at Surry, but have been located since that time.

If these records are not available, have tests been conducted on samples of installed materials to qualify the materials to specified tests?
Remarks:
Even though the records are now available, the tests specified in 2.0 (a) are still going to be performed.

c. Have station cable pulling procedures been updated to include fire stop and repair and inspection? Yes
Remarks:
The general cable pulling procedure in use at the site has been updated and approved to include fire stop repair and inspection. This procedure is presently being used for the cable pulling associated with the installation of the Security Computer.

d. Has an inspection of firestops been completed? Yes
Remarks:

All firestops were inspected by station personnel. Presently, repairs are under way to extend the length of the fire-proofing from the penetration. This about 60% completed. This inspection was not documented. (See recommendations)

Has a repair program been established to upgrade firestops to specified standards? Yes
Remarks:

A periodic Test is being developed to provide a scheduled review of firestops. Repairs required as a result of these inspections will be in accordance with section 16 of the Nuclear Power Station QA Manual.

3.0 VEPCO REPLY TO IE BULLETIN 75-04

a. Is there adequate control of all combustible material such as wood, paper, solvents, and chemicals, in accordance with rules and regulations in the Vepco Accident Prevention Manual? Yes
Remarks:

A visual inspection of general area control of combustible material revealed only minor infractions. These were brought to the attention of the Operating Supervisor. No further action is considered necessary.

b. Is communication equipment available and in working order in spaces critical to the proper functioning of safety-related systems and components? Yes
Remarks:

A visual inspection was made of the physical location of communication systems in the various switchgear rooms, cable vaults and containment penetration areas. The present equipment and location appears to be adequate.

c. Are procedures available at the auxiliary panel outside the control room for orderly shutdown to the hot shutdown condition? Yes
Remarks:

The procedures at both auxiliary shutdown panels appear to be out of date. They reference EP 11 for fire fighting which is no longer in existance. The fire fighting procedure is now AP-17 which was promulgated 12-19-73. The procedure holders are falling apart.

4.0 E. B. RHODES MEMO OF JUNE 13, 1975

a. Has necessary corrective action been taken or initiated to correct the deficiencies noted in this memo? No
Remarks:

No formal action has been initiated to correct those deficiencies noted. A copy of the subject memo is attached and becomes a part of this Audit Report.

5.0 Are portable fire extinguishers available in areas that are susceptable to fire (i.e. lube oil storage tanks, paint and solvent storage areas, or wood, paper and rag storage areas.) Yes
Remarks: Only one portable fire extinguisher was located at the entrance to Unit

5.0 Cont'd

2 containment; there should be at least three. Painting the wall area behind a portable fire extinguisher bright red to identify it is considered a good practice. See memo of 13 June 1975 (E. B. Rhodes to E. M. Sweeney, Jr.) for further discrepancies.

6.0 Is the Surry Emergency Procedure for Fire Fighting adequate? No
Remarks:

The emergency procedure on firefighting has been changed to AP-17; however, the actions of the fire team are not specified, nor is this team identified. The station emergency plan references emergency operating procedures for firefighting details.

7.0 Is there an adequate training program for instructing sta. personnel in fire prevention, reporting, and emergency actions? No
Remarks:

Station personnel are not trained in the operation of firefighting equipment, nor are firefighting teams specified by name and/or position. The philosophy of using firefighting equipment only for emergency situations has obviously not been stressed to station personnel.

Additional observations noted during the audit:

a. Cable bundles in the back of the main control room panels and at the containment penetrations are wrapped in Scotch 27 (fiberglass) electrical tape. This tape is extremely flammable and burns vigorously when ignited.

b. Although the receiving door to the lube oil storage area (a fire protected area) shuts automatically in case of fire, the louvers of that area have no such feature and remain open. In addition, the personnel door to the lube oil storage area was blocked open by several electrical cables.

c. The automatic closure feature of the ventilation fan exhausts on the roof of the turbine building has been deactivated for several fans.

MEMORANDUM

TO E. M. Sweeney, Jr. June 13, 1975

FROM E. B. Rhodes Surry Power Station

FIRE PROTECTION SYSTEM

The following discrepancies were noted on a routine walkdown. Many of these items were noted in my previous memo and are still outstanding.

1. Station #22 has no fire hose and was signed off on 6-4-74 as being O.K. The hose has been missing for 3 months.

2. Fire house #9 was signed off on 6-4-74 as being ok. The door is ripped off, one of the 2½" hoses has the coupling cut off and there isn't any nozzle for the 2½" hose. The fire ax looks as if someone has been cutting sod with it.

3. The fire house in the alley by the machine shop is just a pile of rubbish: the hoses are laying all coiled in a pile on the ground. There isn't any other equipment there (i.e. ax, spanner wrenches or nozzles).

4. The main fire station has a dual six hose connection manifold which is not usable because one of the valves has been laying on the ground for months. This is a common line with the other hydrant making both inoperative.

5. Fire hoses are being used for any job that needs water (i.e. screens being washed down, cleaning the condenser, etc.)

6. Two fire valves are damaged; one being broken off at the ground level which has been that way for months. I pointed this out in my last letter.

7. Two fire extinguishers were empty in the Turbine Building and the inspection of the extinguisher at location #1 is past due.

8. One extinguisher was in the containment for weeks which need to be recharged. I brought this to the attention of the proper people three times; to my knowledge it wasn't removed until the workman cleared the containment.

9. Caps on the various fire hydrants are missing or laying on the ground.

-Edited Copy-

10. Hydrogen tanks are being filled from a tanktruck and no foam or CO_2 is available. If a fire started the only way you could fight it is with a stream of water; there isn't even a fog nozzle available. There should be at least a fire extinguisher at the bottle storage area.

11. The Training Building and both trailers outside the gate do not have any fire extinguishers or not enough in the right places. The area where the prints are made has two copying machines and no fire extinguishers in the room or even on that floor. If we have a fire in that area we would loose all our microfilm cards.

12. Two fire extinguishers in the Environmental Building have not been checked since March.

13. There is no designated area for a fire extinguisher in either Safeguard Building. We have extinguishers in there but if you want one you have to go looking for it.

14. We should have a fog nozzle at all fire stations where oil or chemical fires might breakout. A straight nozzle will only spread the fire. This will make it worse than if we didn't have any fire hose at all.

E. B. Rhodes

cc: T. L. Baucom
R. E. Nicholls
J. Leonard
QA File
J. M. Martin, Jr.

-Edited Copy-

RECOMMENDATIONS

1. Document the inspection of firestops undertaken to satisfy NRC commitments. It is requested that the Supervisor, Quality Assurance (O&M) be provided a copy of this documentation.

2. Update AP-20 at the auxiliary shutdown panels and repair the procedure holders.

3. Initiate formal action to correct deficiencies noted in E. B. Rhodes memo of June 13, 1975.

4. Develop a system for assuring continuing reliability of fire-fighting equipment and the prompt resolution of discrepancies.

5. Revise the existing practices to reflect those described in the Surry Station Emergency Plan Section III-E and IV-D.

6. Develop formal training for fire-fighting personnel. Advise all station personnel on the philosophy for the use of fire-fighting equipment.

7. Modify existing cable bundles wrapped in Scotch 27 (fiberglass) electrical tape to limit flammability.

8. Modify existing louvers in fire boundaries (i.e. lube oil storage area) to provide automatic closure in case of fire.

9. Activate the automatic closure feature on all ventilation exhausts on the roof of the turbine building.