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 50-323 Diablo Canyon Nuclear Power Plant, Unit 2, Pacific Gas & Electric Co. 05000323

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 RECIPIENT AFFILIATION: Light Water Reactors Branch 1

SUBJECT: Forwards revised info re results of evaluation to detect effects of moderate energy line breaks on equipment required for safe shutdown. Also forwards revised actions to be taken to protect vulnerable equipment.

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

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

Dear Mr. Stolz:

Our submittal dated September 14, 1979 responded to an informal staff request to evaluate the Diablo Canyon Plant Design for the effects of moderate energy line breaks on equipment required for safe shutdown. Attachments 2 and 3 of that submittal contained the results of that evaluation and the action to be taken to protect any vulnerable equipment.

Subsequent to the above submittal, additional evaluation, design, and construction planning have been completed. As a result, Attachments 2 and 3 have been revised and are attached. A vertical line with an adjacent letter "R" indicates the location of the change.

The September 14, 1979 submittal stated that the plant modifications would be completed by October 30, 1979. This date was not met due to realignment of manpower to other design efforts. The modifications will, however, be completed prior to fuel loading.

Five copies of this submittal have been sent directly to Mr. Bart Buckley.

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
A
8001080 386

Attachments



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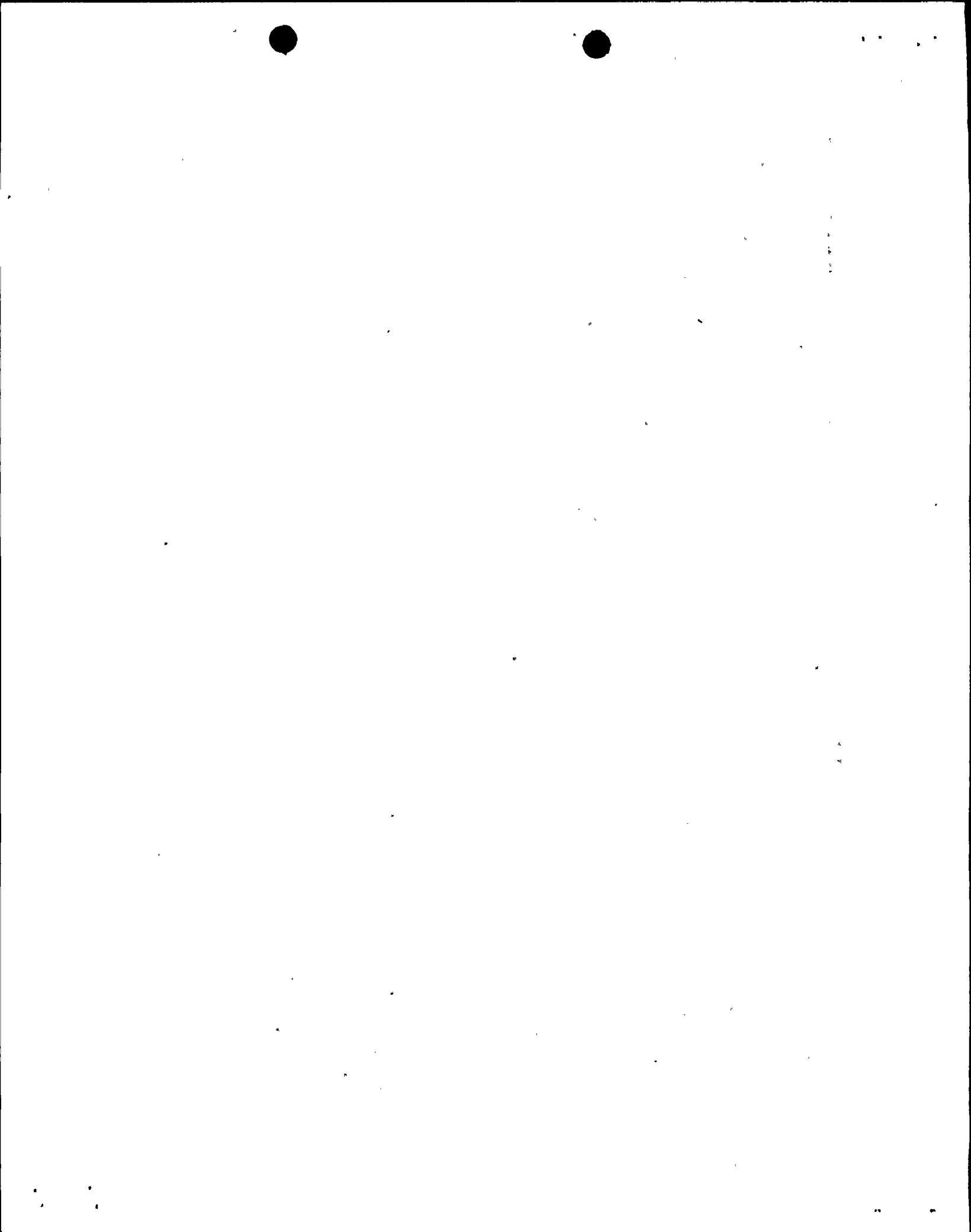
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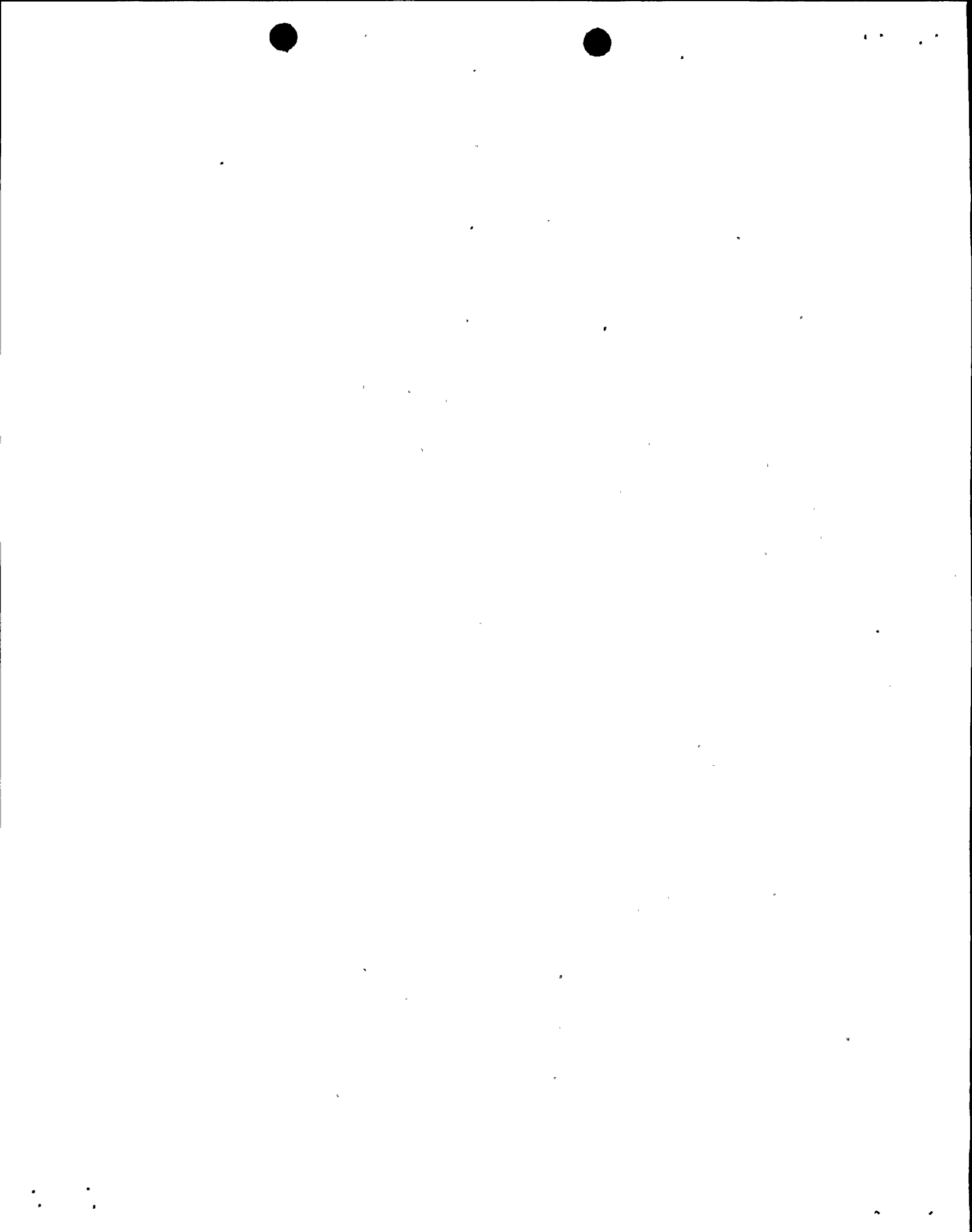
RESULTS OF MODERATE ENERGY LINE BREAK REVIEW FOR EQUIPMENT
AND VALVES REQUIRED FOR HOT SHUTDOWN AND/OR COLD SHUTDOWN

| EQUIPMENT OR COMPONENT | PLANT AREA | LINE NO. OF MOD. ENERGY LINE IN CLOSE PROXIMITY* | SUBJECT TO FLUID SPRAY YES OR NO | EVALUATION | ACTION TO BE TAKEN BY PGANDE TO PROTECT EQUIPMENT |
|---|---|--|--|---|---|
| 1. AUXILIARY FEEDWATER PUMP TURBINE | 100' AUX. BLDG. | 1-S2-221-18 C | YES | TURBINE-DRIVE ELECTRONIC SPEED CONTROL GOVERNOR IS SUBJECT TO DIRECT WATER SPRAY | INSTALL STEEL PLATE ABOVE THE DRIVE TURBINE SUCH THAT WATER CANNOT IMPINGE ON THE GOVERNOR MECHANISM |
| 2. AUXILIARY FEEDWATER PUMP (TURBINE-DRIVEN) | 100'/AUX. BLDG. | 1-K-721-12 E | YES | WATER SPRAY ON PUMP CASING OR APPURTENANCES WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 3. DIESEL-GENERATOR EMERGENCY TRIP SWITCHES | 85'/TURB. BLDG. (CORRIDOR OUTSIDE D-C ROOMS) | FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER IN LEAKAGE COULD RESULT IN THE LOSS OF FUNCTION OF ONE DIESEL-GENERATOR | PROTECT THE EMERGENCY TRIP SWITCHES FROM WATER IN LEAKAGE BY INSTALLING 1 1/2 GA. SHEET METAL SPRAY BARRIERS |
| 4. DIESEL-GENERATOR EMER. TRIP RELAY, EMER. TRIP LEVER, AND EMER. TRIP POSITION SWITCH | 85'/TURB. BLDG. | INTEGRAL LUBE OIL PIPING | YES | FLUID SPRAY ON EMER. TRIP COMPONENTS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 5. DIESEL-GENERATOR | 85'/TURB. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 6. DIESEL-GENERATOR STARTING AIR RECEIVERS | 85'/TURB. BLDG. | INTEGRAL JACKET COOLING WATER PIPING | YES | WATER SPRAY ON THE STARTING AIR RECEIVERS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 7. DIESEL-GENERATOR FUEL OIL FILTERS | 85'/TURB. BLDG. | INTEGRAL FUEL OIL PIPING | YES | FUEL SPRAY ON FUEL OIL FILTER WOULD NOT RESULT IN LOSS OF FUNCTION | NO ACTION REQUIRED |
| 8. DIESEL-GENERATOR FUEL OIL PRIMING TANK | 85'/TURB. BLDG. | INTEGRAL LUBE OIL PIPING | YES | LUBE OIL SPRAY ON THE PRIMING TANK WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 9. DIESEL-GENERATOR FUEL OIL STRAINERS | 85'/TURB. BLDG. | INTEGRAL FUEL OIL PIPING | YES | FUEL SPRAY ON THE FUEL OIL STRAINERS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 10. DIESEL-GENERATORS FUEL OIL TRANSFER PPS. & MOTORS | 85'/VAULT | FUEL OIL PIPING | YES | FUEL OIL SPRAY ON THE TRANSFER PUMPS OR MOTORS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |

* WHILE OTHER MODERATE ENERGY LINES MAY BE IN THE VICINITY, THE LINE SHOWN IS THE MOST LIMITING IN TERMS OF THE POSTULATED QUANTITY OF FLUID RELEASED



| | | | | | | | |
|---|-----|---|------------------------------------|--|-----|---|---|
| | 11. | CENTRIFUGAL CHARGING PUMPS | 75'/AUX. BLDG. | INTEGRAL BEARING COOLING WATER PIPING FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER IN LEAKAGE TO THE MOTOR POWER SUPPLY TERMINAL BOX MIGHT CAUSE A LOSS OF FUNCTION | INSTALL GASKETS ON THE MOTOR POWER SUPPLY TERMINAL BOX COVERS |
| R | 12. | BORIC ACID TANKS | 115'/AUX. BLDG. | 1-S2-1569-2 E | YES | WATER SPRAY ONTO THE BORIC ACID STORAGE TANKS WOULD NOT CAUSE A LOSS OF FUNCTION | NO ACTION REQUIRED |
| R | 13. | BORIC ACID TRANSFER PUMPS | 100'/AUX. BLDG. | 1-K-1595-3 E 1-S2-1564-2 E | YES | WATER SPRAY ONTO THE BORIC ACID TRANSFER PUMPS COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE PUMP AND THE POSTULATED PIPE BREAK LOCATIONS |
| | 14. | BORIC ACID SYSTEM HEAT TRACING | 100'/AUX. BLDG. 115'/AUX. BLDG. | MISCELLANEOUS | YES | HEAT TRACE SYSTEM TERMINAL BOX COVERS ARE SUPPLIED WITH GASKETS. IF SECURELY CLOSED, WATER SPRAY ON TO THE TERMINAL BOXES WOULD NOT RESULT IN A LOSS OF FUNCTION. | PRIOR TO PLANT OPERATION VERIFY THAT ALL HEAT TRACE SYSTEM TERMINAL BOX COVERS ARE SECURELY CLOSED |
| | 15. | REGENERATIVE HEAT EXCHANGER | 91'/CON'T. | NONE | NO | N.A. | NO ACTION REQUIRED |
| | 16. | SEAL WATER INJECTION FILTER | 100'/AUX. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| R | 17. | BORIC ACID FILTER | 100'/AUX. BLDG. | 1-S2-1564-2 E | YES | WATER SPRAY ONTO THE BORIC ACID FILTER WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| | 18. | RESIDUAL HEAT REMOVAL PUMPS | 58'/AUX. BLDG. | 1-K-128-1 1/2 C 1-K-131-1 1/2 C | YES | WATER SPRAY FROM THE SEAL WATER COOLING WATER LINES COULD PENETRATE THE MOTOR HOUSING. A LOSS OF FUNCTION MIGHT RESULT | PROTECT THE MOTOR HOUSINGS FROM WATER SPRAY BY INSTALLING GAURD HOSE OVER THE SEAL WATER COOLER LINES |
| | 19. | RESIDUAL HEAT REMOVAL HEAT EXCHANGERS | 58'/AUX. BLDG. | 1-K-124-12 C | YES | WATER SPRAY ONTO THE RESIDUAL HEAT REMOVAL HEAT EXCHANGERS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| | 20. | COMPONENT COOLING WATER PUMPS | 73'/AUX. BLDG. | 1-K-2994-20 C | YES | WATER SPRAY COULD PENETRATE THE MOTOR POWER SUPPLY TERMINAL BOX. THIS MIGHT CAUSE A LOSS OF FUNCTION. | INSTALL GASKETS ON THE MOTOR POWER SUPPLY TERMINAL BOX COVERS |
| | 21. | COMPONENT COOLING WATER HEAT EXCHANGERS | 85'/TURB. BLDG. | 1-K-95-30 C 1-K-101-30 C | YES | WATER SPRAY ONTO THE COMPONENT COOLING WATER HEAT EXCHANGERS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |



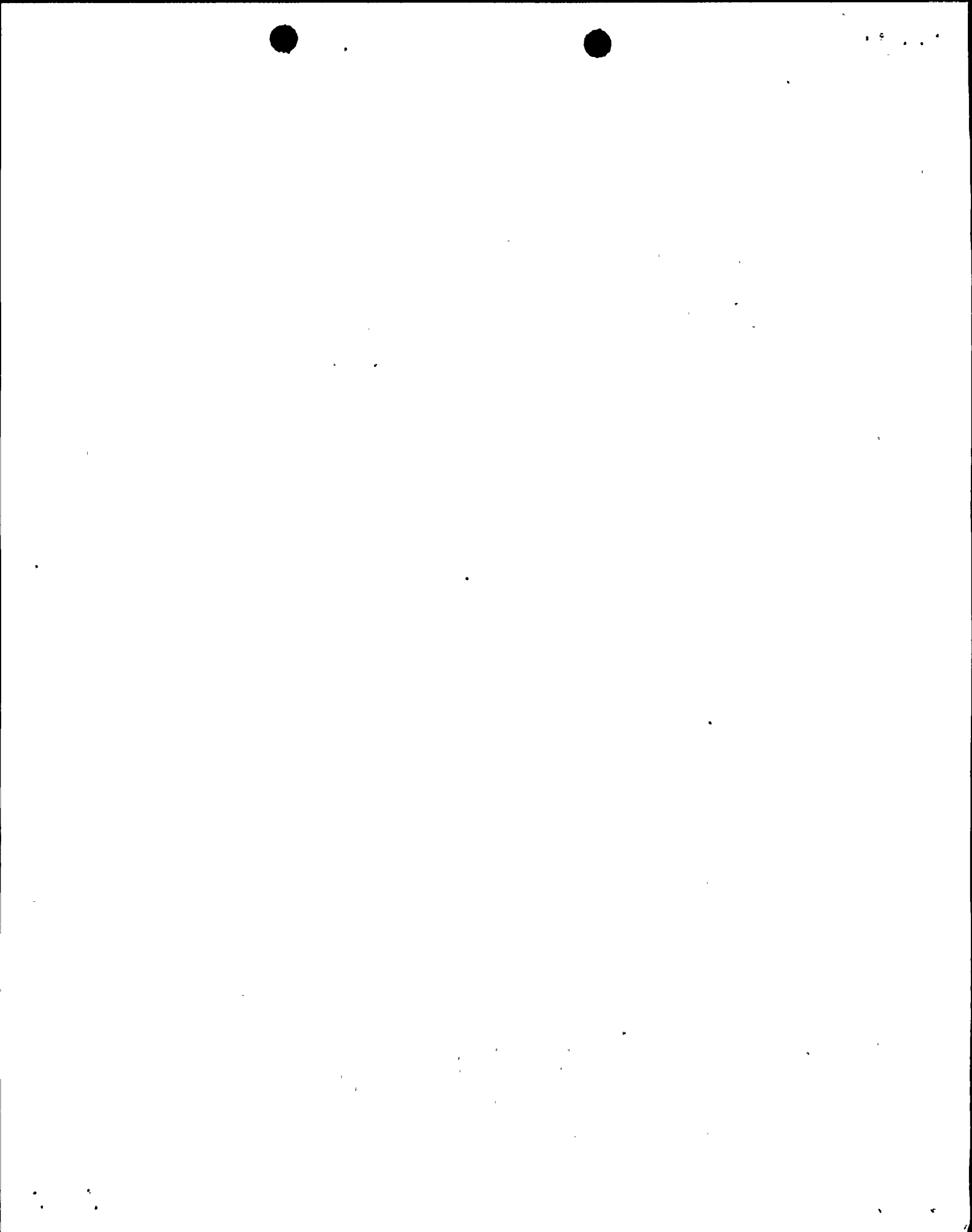
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|---|-----|---|-----------------|---------------|-------------------|--|--|
| R | 22. | AUXILIARY SALT WATER PUMPS | -2'/INTK. BLDG. | 1-G1-680-24 C | YES (FLOODING) | THE POSTULATED BREAK COULD FLOOD THE WATER TIGHT PUMP ROOM. THIS MIGHT RESULT IN THE LOSS OF FUNCTION OF ONE AUX. SALT WATER PUMP. | VERIFY THERE IS AN ADEQUATE DRAINAGE PATH FROM EACH AUX. SALTWATER PUMP ROOM |
| | 23. | MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP | 100'/AUX. BLDG. | 1-52-221-18 C | YES | WATER SPRAY ONTO THE AUX. FEEDWATER PUMP CASINGS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| | 24. | AUX. FEEDWATER PUMP MOTOR | 100'/AUX. BLDG. | 1-52-221-18 C | YES | WATER SPRAY ONTO THE AUX. FEEDWATER PUMP MOTORS WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| | 25. | STM. GEN. 1-1 AUX. FW SUPPLY VALVE LCV-106 | 115'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| | 26. | STM. GEN. 1-2 AUX. FW SUPPLY VALVE LCV-107 | 115'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| R | 27. | STM. GEN. 1-3 AUX. FW SUPPLY VALVE LCV-108 | 115'/AUX. BLDG. | 1-K-4072-3 E | YES | WATER SPRAY ONTO VALVE LCV-108 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTULATED PIPE BREAK LOCATIONS |
| R | 28. | STM. GEN. 1-4 AUX. FW SUPPLY VALVE LCV-109 | 115'/AUX. BLDG. | 1-K-4072-3 E | YES | WATER SPRAY ONTO VALVE LCV-109 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTULATED PIPE BREAK LOCATIONS |
| | 29. | STM. GEN. 1-1 AUX. FW SUPPLY VALVE LCV-110 | 115'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| | 30. | STM. GEN. 1-2 AUX. FW SUPPLY VALVE LCV-111 | 115'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| R | 31. | STM. GEN. 1-3 AUX. FW SUPPLY VALVE LCV-113 | 115'/AUX. BLDG. | 1-K-4072-3 E | YES | WATER SPRAY ONTO VALVE LCV-113 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTULATED PIPE BREAK LOCATIONS |
| R | 32. | STM. GEN. 1-4 AUX. FW SUPPLY VALVE LCV-115 | 115'/AUX. BLDG. | 1-K-4072-3 E | YES | WATER SPRAY ONTO VALVE LCV-115 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTULATED PIPE BREAK LOCATIONS |
| | 33. | MAIN STM. TO TURBINE DRIVEN AUX. FW PUMP FCV-95 | 115'/AUX. BLDG. | 1-K2-319-12 B | YES | WATER SPRAY ONTO VALVE FCV-95 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |



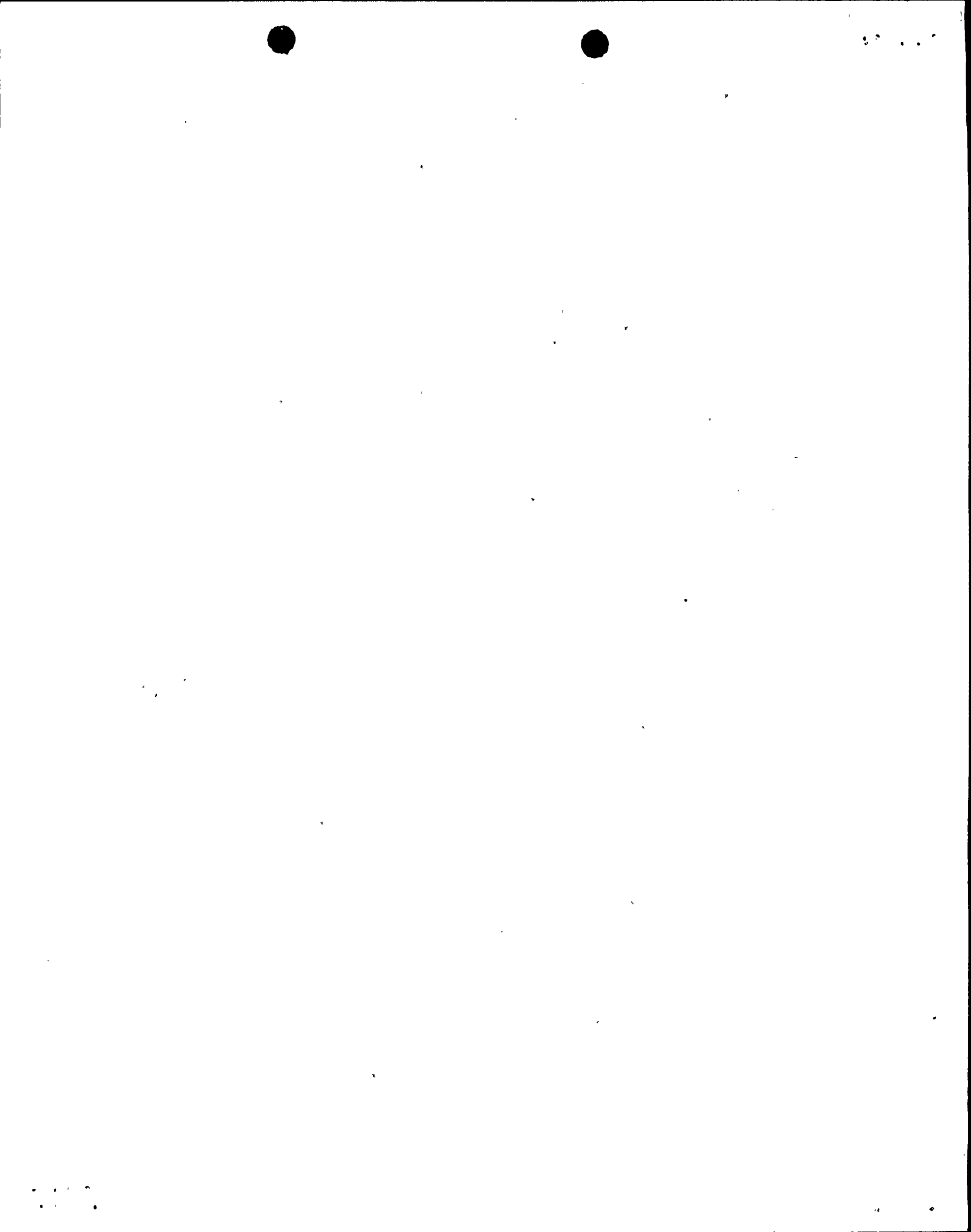
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| 34. | LOOP 1 STEAM TO AFW TURBINE FCV-37 | 120'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| 35. | LOOP 2 STEAM TO AFW TURBINE FCV-38 | 115'/AUX. BLDG. | FIRE PROTECTION SYSTEM PIPING | YES | WATER SPRAY ONTO VALVE FCV-38 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 36. | AUX. FW PUMP 1-1 RAW WATER SUPPLY FCV-436 | 100'/AUX. BLDG. | 1-K-1862-8 E | YES | WATER SPRAY ONTO VALVE FCV-436 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTU- LATED PIPE BREAK LOCATIONS |
| 37. | AUX. FW PUMP 1-2 RAW WATER SUPPLY FCV-437 | 100'/AUX. BLDG. | 1-K-1862-8 E | YES | WATER SPRAY ONTO VALVE FCV-437 COULD RESULT IN A LOSS OF FUNCTION | INSTALL A BARRIER BETWEEN THE VALVE ACTUATOR AND THE POSTU- LATED PIPE BREAK LOCATIONS |
| 38. | EMERGENCY BORATE VALVE 8104 | 100'/AUX. BLDG. | 1-S2-1458-4 B | YES | WATER SPRAY ONTO VALVE 8104 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 39. | BORIC ACID BLENDER INLET VALVE FCV-110 A | 100'/AUX. BLDG. | 1-S2-1458-4 B | YES | WATER SPRAY ONTO VALVE FCV-110 A WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 40. | CHG. PUMPS DISCHARGE TO REGEN. HX. HCV-142 | 85'/AUX. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 41. | CHG. PUMPS DISCHARGE TO REGEN. HX. 8108 | 85'/AUX. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 42. | CHG. PUMPS DISCHARGE TO REGEN. HX. 8107 | 100'/AUX. BLDG. | FIRE PROTECTION SYSTEM PIPING | YES | WATER SPRAY ONTO VALVE 8107 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 43. | CHG. TO LOOP 4 COLD LEG 8146 | 91'/CONT. BLDG. | 1-K2-315-12 B | YES | WATER SPRAY ONTO VALVE 8146 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 44. | CHG. TO LOOP 3 COLD LEG (ALT.) 8147 | 91'/CONT. BLDG. | 1-K2-315-12 B | YES | WATER SPRAY ONTO VALVE 8147 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 45. | HCV-142 MANUAL BYPASS VALVE 8403 | 85'/AUX. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 46. | CHG. PUMPS DISCHARGE HDR. FCV-128 | 73'/AUX. BLDG. | 1-S2-994-1 E | YES | WATER SPRAY ONTO VALVE FCV-128 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |

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| 47. | FCV-128 MANUAL BYPASS CHG. PP. 1 8387 B | 73'/AUX. BLDG. | 1-K-2354-2 C | YES | WATER SPRAY ONTO VALVE 8387 B WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 48. | FCV-128 MANUAL BYPASS CHG. PP. 2 8387 C | 73'/AUX. BLDG. | 1-K-2356-2 C | YES | WATER SPRAY ONTO VALVE 8387 C WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 49. | BORIC ACID BLENDER BYPASS 8471 | 100'/AUX. BLDG. | 1-52-1458-4 B | YES | WATER SPRAY ONTO VALVE 8471 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 50. | VALVE 8145 MANUAL BYPASS | 91'/CONT. BLDG. | 1-K2-315-12 B | YES | WATER SPRAY ONTO THIS VALVE WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 51. | PRESSURIZER AUXILIARY SPRAY 8145 | 91'/CONT. BLDG. | 1-K2-315-12 B | YES | WATER SPRAY ONTO VALVE 8145 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 52. | REFUELING WATER STG. TANK TO CHG. PP. SUCTION 8805 A AND 8805 B | 85'/AUX. BLDG. | 1-K-99-12 C | YES | WATER SPRAY ONTO VALVES 8805 A AND 8805 B WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 53. | HOT LEG RHR SUCTION VALVE 8701 | 117'/CONT. BLDG. | 1-K2-314-12 B | YES | WATER SPRAY ONTO VALVE 8701 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 54. | HOT LEG RHR SUCTION VALVE 8702 | 117'/CONT. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 55. | RHR TO COLD LEGS 3 AND 4 HCV-637 | 100'/AUX. BLDG. | 1-52-1988-8 C | YES | WATER SPRAY ONTO VALVE HCV-637 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 56. | RHR TO COLD LEGS 1 AND 2 HCV-638 | 100'/AUX. BLDG. | 1-52-224-8 C | YES | WATER SPRAY ONTO VALVE HCV-638 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 57. | RHR HEAT EXCHANGER TO COLD LEG 1 AND 2 8809 A | 100'/AUX. BLDG. | 1-K2-3007-10 B | YES | WATER SPRAY ONTO VALVE 8809 A WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 58. | RHR HEAT EXCHANGER TO COLD LEG 3 AND 4 8809 B | 100'/AUX. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 59. | PRESSURIZER SAFETY VALVES 8010 A, 8010 B, AND 8010 C | 180'/CONT. BLDG. | NONE | NO | N.A. | NO ACTION REQUIRED |
| 60. | CCW OUT OF CCW HK. NO. 1 AND HK. NO. 2 FCV-430 FCV-431 | 85'/TURB. BLDG. | FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER SPRAY ONTO VALVES FCV-430 AND FCV-431 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |



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|-----|--|-----------------|-------------------------------------|-----|--|--------------------|
| 61. | CCW SUPPLY TO HDR. "C" FCV-355 | 85'/TURB. BLDG. | FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER SPRAY ONTO VALVE FCV-355 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 62. | RHR HK. 1-1 AND 1-2 OUTLET FCV-364 FCV-365 | 85'/AUX. BLDG. | 1-K-127-12 C | YES | WATER SPRAY ONTO VALVES FCV-364 AND FCV-365 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 63. | STM. GEN. 1-1 AND 1-2 10% ATM. STM. DUMP FCV-19 FCV-20 | 140'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| 64. | STM. GEN. 1-3 AND 1-4 10% ATM. STM. DUMP FCV-21 FCV-22 | 140'/AUX. BLDG. | 1-K-121-6 C | YES | WATER SPRAY ONTO VALVES FCV-21 AND FCV-22 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 65. | MAIN STM. SAFETY VALVES, LEAD 1 RV-3 RV-4 RV-5 RV-6 RV-222 | 140'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| 66. | MAIN STM. SAFETY VALVES, LEAD 2 RV-7 RV-8 RV-9 RV-10 RV-223 | 140'/PIPEWAY | NONE | NO | N.A. | NO ACTION REQUIRED |
| 67. | MAIN STM. SAFETY VALVES, LEAD 3 RV-11 RV-12 RV-13 RV-14 RV-224 | 140'/AUX. BLDG. | 1-K-121-6 C | YES | WATER SPRAY ONTO THESE SAFETY VALVES WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 68. | MAIN STM. SAFETY VALVES, LEAD 4 RV-58 RV-59 RV-60 RV-61 RV-225 | 140'/AUX. BLDG. | 1-K-121-6 C | YES | WATER SPRAY ONTO THESE SAFETY VALVES WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 69. | MAIN STM. ISOLATION VALVE FCV-41 | 115'/AUX. BLDG. | FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER SPRAY ONTO FCV-91 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 70. | MAIN STM. ISOLATION VALVE FCV-42 | 115'/AUX. BLDG. | FIRE PROTECTION SPRINKLER SYSTEM | YES | WATER SPRAY ONTO FCV-42 WOULD NOT RESULT IN A LOSS OF FUNCTION | NO ACTION REQUIRED |
| 71. | MAIN STM. ISOLATION VALVE FCV-43 | 115'/PIPEWAY | | NO | N.A. | NO ACTION REQUIRED |
| 72. | MAIN STM. ISOLATION VALVE FCV-44 | 115'/PIPE | | NO | N.A. | NO ACTION REQUIRED |



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73. AUX. S.W. TO CCW HK. 1-1 85'/TURB. BLDG. 1-2-K-998-12 E
AND 1-2 FCV-602 FCV-603

YES
(FLOODING)

THESE VALVES ARE LOCATED BELOW THE
CCW HK'S IN CONCRETE PITS. THE
POSTULATED BREAK WOULD CAUSE
FLOODING OF THESE PITS AND
IMMERSION OF THE VALVES. THIS
SITUATION COULD CAUSE A LOSS OF
FUNCTION.

CONSTRUCT A STEEL PLATE ENCLOSURE TO SEPARATE THE MODERATE
ENERGY LINES FROM THE VALVES



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RESULTS OF MODERATE-ENERGY LINE BREAK REVIEW FOR
INSTRUMENTS REQUIRED FOR HOT SHUTDOWN AND/OR COLD SHUTDOWN

| <u>Instrument</u> | <u>Plant Area</u> | <u>Panel Mounted Yes or No</u> | <u>Panel Subject to Fluid Spray Yes or No</u> | <u>Evaluation</u> | <u>Action to be taken by PG&E to protect equipment</u> |
|--|-------------------|------------------------------------|---|--|---|
| 1. Stm. Gen. 1-1 Level, LT-517 | 91'/Cont. Bldg. | Yes | Yes | Water inleakage may cause a loss of function. | Seal all electrical and instrument tubing penetra- tions at top of panel. |
| 2. Stm. Gen. 1-1 Level, LT-518 | " " | " | " | " " | " " |
| 3. Stm. Gen. 1-1 Level, LT-519 | " " | " | " | " " | " " |
| 4. Stm. Gen. 1-2 Level, LT-527 | " " | " | " | " " | " " |
| 5. Stm. Gen. 1-2 Level, LT-528 | " " | " | " | " " | " " |
| 6. Stm. Gen. 1-2 Level, LT-529 | " " | " | " | " " | " " |
| 7. Stm. Gen. 1-3 Level, LT-537 | " " | " | " | " " | " " |
| 8. Stm. Gen. 1-3 Level, LT-538 | " " | " | " | " " | " " |
| 9. Stm. Gen. 1-3 Level, LT-539 | " " | " | " | " " | " " |
| 10. Stm. Gen. 1-4 Level, LT-547 | " " | " | " | " " | " " |
| 11. Stm. Gen. 1-4 Level, LT-548 | " " | " | " | " " | " " |
| 12. Stm. Gen. 1-4 Level, LT-549 | " " | " | " | " " | " " |
| 13. Pressurizer Level, LT-459 | " " | " | " | " " | " " |
| 14. Pressurizer Level, LT-460 | " " | " | " | " " | " " |
| 15. Pressurizer Level, LT-461 | " " | " | " | " " | " " |
| 16. Boric Acid Tank 1-1 Level LT-102 | 100'/Aux. Bldg. | " | " | " " | " " |
| 17. Boric Acid Tank 1-2 Level LT-106 | " " | " | " | " " | " " |
| 18. Primary Coolant System Temperature | " " | " | " | " " | " " |

