DCPP UNIT 2 ISI/IST PROGRAM PLAN
CHANGE DESCRIPTION
REVISION 4
ADDENDA 1

COPYHOLDERS:

Addenda 1 to Revision 4 of the DCPP Unit 2 Inservice Inspection and Testing Program Plan is issued as a controlled document in accordance with PG&E procedure AP E-4S7. All changed pages should be removed from the Program Plan binder and replaced with Addenda 1 to Revision 4.

The following technical changes are incorporated in Addenda 1 to Revision 4 and are identified by revision bars.

## INSERVICE INSPECTION (ISI)

| CHANGE | DESCRIPTION | JUSTIFICATION |
|---|---|---|
| Section 3.5 Tables 5.1, 5.2, and 5.3 Page 1 of 1 | Changed Rounded Years To Actual Fractions 3, 7, 10 Yrs to 3 1/3, 6 2/3, 10 Yrs | These Inspection Periods Are Inconsistent With The Other Specified Periods In The Program Plan |
| Test Summary Table 5.3 Page 2 of 4 | Changed IWD-5223 Test(a) To Required Test(b). This Is An Atmospheric Tank | This Test Is Conducted With The Surge Tank Filled To Normal Level |
| Table 5.3 Page 3 of 4 | Test #15: Sheets #33 And 36 Instead Of Sheets 25, 33. Test #16: Sheets 24,25, 33, and 34 Instead Of 24, 25 and 34 | Typographical Correction Of Sheets #'s. |
| Table 5.3 Page 4 of 4 | Include Test 23 In Its Entirety | Inadvertent Omission From Rev. 3 to Rev. 4 |
| Test Summary Table 5.4 Pages 1 Thru 9 of 9 Test Summary Table 5.2, Page 9,10,11,12, 13 of 13 | Clarify Basis, Alternate Testing, And Test Schedule For Request Relief #8. Revise Alternate Test Schedule For Request For Relief #9 | NRC Request For Additional Information In Telephone Call |

TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS-CLASS I REV. 4

ADDENDA 1 SYSTEM PRESSURE - TEST SUMMARY (FOOTNOTES)
TABLE: 5.1, 5.2 & 5.3 (Section 3.5A)


FOOTNOTES:

(1) Identifies the drawing sheet number of the ASME code classification drawings, PG&E Drawing 104628, Revision 19.

(2) Identifies the applicable ASME B&PV Code Section XI pressure test requirement, as established by the 1977 Edition - Summer 1978 Addenda.

(3) INS/FUNCT is the test pressure developed under the operating condition associated with normal system operation or a system/component functional test.
LLRT is the local leak rate test per 10CFR50 App. J.

(4) I is one test per each inspection interval (10 YR)
P is one test per each inspection period (40 months; 3 1/3, 6 2/3, and 10 years)
R is one test per each refueling outage

(5) $P_o$ is the nominal system operating pressure.

$Ps_v$ is the safety or relief valve setting pressure.

$P_g$ is the design pressure of vapor or gas space above liquid level for which over pressure protection is provided by relief valves.

NOTE 1: Piping pressurized during normal reactor operation and does not require test per IWC-5221.
Normal reactor operation includes systems in operation during startup, operation, cooldown, and shutdown conditions. (IWC-1220 footnote [2])

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS - CLASS 2

Table 5.2
REV. 4 ADDENDA 1

SYSTEM PRESSURE
TEST SUMMARY


| | COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET No.(1) | CODE REQUIREMENT(2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ(4) | CONTAINMENT PENETRATION | REMARKS (5) (X) From Footnote Page 1 Of 1 |
|---|---|---|---|---|---|---|---|
| 64. | Reactor Coolant Pumps CCW Supply & Oil Cooler Return Containment Penetrations, Spec K2 | 29 | IWC-5222 (a) | 165 | I | | $P_{sv}$ = 150 |
| 65. | Reactor Coolant Pumps CCW Return Containment Penetration, Line K17-1357-6 | 29 | IWC-5222 (a) | 3106 | I | | $P_{sv}$ = 2485 |
| 66. | Excess Letdown Heat Exchanger, Shell Side | 31 | IWC-5222 (a) | 165 | I | | $P_{sv}$ = 150 |
| 67. | Excess Letdown Heat Exchanger, Shell Side | 31 | IWC-5222 (a) | 165 | I | | $P_{sv}$ = 150 |
| 68. | Steam Gen $N_2$ Supply Hdr | 6 | IWC-5221 (a) | Ins/Funct | P | 52 | Line 1863. Tested at normal operating pressure. |
| 69. | Line 4681, 4682, 4683, 4684, 4586, 4686 | 9 | Exempt | None | None | 59,80 | NA-1130 (c) Cap sealed. |
| 70. | PZR Quench Tk Gas Analyzer | 10 | IWC-5221 (a) | LLRT@50PSI | P | 76 | Line 1163, *Request for Relief #8 |
| 71. | PZR Relief Tk $N_2$ Supply | 10 | IWC-5222 (a) | Ins/Funct@NOP* | I | | Line 1161, *Request for relief #8 |
| 72. | Pri Wtr Sup to Pzr Rlf Tk | 10 | IWC-5222 (a) | Ins/Funct@NOP* | I | 52 | Line 3000. *Request for relief #8 |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS - CLASS 2

Table 5.2
REV.4 ADDENDA 1

SYSTEM PRESSURE
TEST SUMMARY


| COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET No.(1) | CODE REQUIREMENT(2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ(4) | CONTAINMENT PENETRATION | REMARKS (5) (X) From Footnote Page 1 Of 1 |
|---|---|---|---|---|---|---|
| 73. Rv's Discharge To P.R.T.:<br>Chg Pps.Suct Rv Disch<br>RHR Ht Exchr 1 Out Rv<br>RHR Ht Exchr 2 Out Rv<br>SI Pps Suct Rv Out<br>Cnt Spray. Pps Disch Rv Out P.R.T.<br>SI Pp 1-2 Disch Line Rv<br>SIS Rv Outlet Hdr To P.R.T.<br>SIS Rv Outlet Hdr To P.R.T.<br>SIS Pp 1-1 Disch Line Rv<br>SIS Pps Recirc Disch Line Rv | 10 | IWC-5221 (a) | LLRT@50PSI* | P | 71 | *Request for relief #8<br>Line 1459<br>Line 2003<br>Line 2004<br>Line 2061<br>Line 2518<br>Line 2572<br>Line 2998<br>Line 2999<br>Line 3851<br>Line 3852 |
| 74. PZR Deadweight Press Gen | 10 | None | None | None | 76 | Line 478. Abandoned In place |
| 75. Tanks $N_2$ Supply Hdr | 17 | IWC-5222 (a) | Ins/Funct@NOP* | I | 51 | Line 531. *Request for relief #8. |
| 76. Accums Samples Hdr | 22 | IWC-5221 (a) | Ins/Funct@NOP* | I* | 59 | Line 1679. *Request for relief #8. |
| 77. Lines 636, 2514, 2515, 637 4529, 4525 | 23 | Exempt | None | None | 76,59,78 52,80,59 | NA-1130 (c). (Note penetration receives LLRT) |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS - CLASS 2

Table 5.2
REV. 4 ADDENDA 1

SYSTEM PRESSURE TEST SUMMARY


| COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET No.(1) | CODE REQUIREMENT(2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ(4) | CONTAINMENT PENETRATION | REMARKS (5) (X) From Footnote Page 1 Of 1 |
|---|---|---|---|---|---|---|
| 78. Fuel Trans Tube To Refuel Canal | 24,42 | IWC-5221 (a) | (<50) R for R #9 | P | 64 | Line 1336. Request for relief #9 O-Ring seal test @ flange |
| 79. Aux Steam Cont Penetrator | 40 | IWC-5221 (a) | LLRT@50PSI* | P | 70 | Line 3935. *Request for relief #8 |
| 80. Firewater Supply Before Cont. | 41 | IWC-5222 (a) | Ins/Funct@NOP* | I | 79 | Line 986. *Request for relief #8 |
| 81. Cont Str Sumps Pps Disch | 42 | IWC-5221 (a) | LLRT@50PSI* | P | 49 | Line 749. *Request for relief #8 |
| 82. Refueling Canal Water Inlet | 42 | IWC-5221 (a) | Ins/Funct@NOP* | I* | 46 | Line 3001. *Request for relief #8 |
| 83. Refueling Canal Water Return | 42 | IWC-5221 (a) | LLRT@50PSI* | P | 47 | Line 2993. *Request for relief #8 |
| 84. React Cool Drn Tk $N_2$ Supply | 42 | IWC-5222 (a) | Ins/Funct@NOP* | I | 52 | Line 527. *Request for relief #8 |
| 85. Post LOCA Sample & R & Cavity Sump | 42 | IWC-5221 (a) | LLRT@50PSI* | P | 82 | Line 4663. *Request for relief #8 |
| 86. React Cool Drn Tk Vent | 42 | IWC-5222 (a) | LLRT@50PSI* | P* | 51 | Line 525. *Request for relief #8 |
| 87. React Cool Drn Tk Gas Anal | 42 | IWC-5221 (a) | LLRT@50PSI* | P | 51 | Line 526. *Request for relief #8 |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS - CLASS 2

Table 5.2
REV. 4 ADDENDA 1

SYSTEM PRESSURE
TEST SUMMARY


| | COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET No.(1) | CODE REQUIREMENT(2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ(4) | CONTAINMENT PENETRATION | REMARKS (5) (X) From Footnote Page 1 Of 1 |
|---|---|---|---|---|---|---|---|
| 88. | React Cool Drn Pps Disch Hdr | 42 | IWC-5221 (a) | Ins/Funct@NOP* | P | 50 | Line 3729. *Request for relief #8 |
| 89. | Chps Air Sup Fans 1 & 2 Disch Ext And Penetrator 83 Inlet & Air Sup | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 83 | Line 4382, 4386, 4387, 4388, 4389. *Request for relief #8 |
| 90. | Chps Exh Air Filt 2 Inlet | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 81 | Line 4390. *Request for relief #8 |
| 91. | Chps Exh Sys Flow Cont In | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 57 | Line 4395. *Request for relief #8 |
| 92. | Containment Vacuum Relief | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 63 | Line 647. *Request for relief #8 |
| 93. | Containment Purge Relief | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 62 | Line K2-48" (RCV-11 To RCV-12). *Request for relief #8 |
| 94. | Containment Purge In | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 61 | Line K2-48" (FCV-661 TO FCV-660). *Request for relief #8 |
| 95. | Incore chiller Water Rtn. | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 83 | Line 3936. *Request for relief #8 |
| 96. | Incore Chiller Water Supply | 43 | IWC-5221 (a) | LLRT@50PSI* | P | 82 | Line 3937. *Request for relief #8 |
| 97. | Containment Air Sample Inlet | 44 | IWC-5222 (a) | LLRT@50PSI | P* | 68 | Line 3837. *Request for relief #8 |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS - CLASS 2

Table 5.2
REV. 4 ADDENDA 1

SYSTEM PRESSURE TEST SUMMARY


| COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET No.(1) | CODE REQUIREMENT(2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ(4) | CONTAINMENT PENETRATION | REMARKS (5) (X) From Footnote Page 1 Of 1 |
|---|---|---|---|---|---|---|
| 98. Containment Air Sample Return | 44 | IWC-5222 (a) | LLRT@50PSI* | P* | 69 | Line 3838. *Request for relief #8 |
| 99. Post LOCA Samp Cnt Air Rtn | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 82 | Line 5190. *Request for relief #8 |
| 100. Post LOCA Samp Cnt Air Sup | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 82 | Line S-3/8" (FCV-698 to FCV-699). *Request for relief #8 |
| 101. Hyd Mon Cel 82 Cnt Air Sup | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 52 | Line 4633. *Request for relief #8 |
| 102. Hyd Mon Cel 82 Cnt Air Rtn | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 52 | Line 4634. *Request for relief #8 |
| 103. Hyd Mon Cel 83 Cnt Air Sup | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 78 | Line 4635. *Request for relief #8 |
| 104. Hyd Mon Cel 83 Cnt Air Rtn | 44 | IWC-5221 (a) | LLRT@50PSI* | P | 78 | Line 4636. *Request for relief #8 |
| 105. Service Air Penetrator Hdr | 45 | IWC-5221 (a) | LLRT@50PSI* | P | 56 | Line 3941. *Request for relief #8 |
| 106. Inside Cnt Instr Air Sup Hdr | 45 | IWC-5222 (a) | Ins/Funct@NOP* | I | 54 | Line 3242. *Request for relief #8 |
| 107. Cnt Instr Air Sup FCV-584 BP | 45 | IWC-5222 (a) | Ins/Funct@NOP* | I | 54 | Line 4353. *Request for relief #8 |

TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS-CLASS 3 REV. 4

SYSTEM PRESSURE - TEST SUMMARY
ADDENDA 1 TABLE: 5.3
PAGE 2A of 4

| | COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET NO. (1) | CODE REQUIREMENT (2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ (4) | REMARKS (5) |
|---|---|---|---|---|---|---|
| | | | | | | (X) From footnote page 1 of 1 |
| 7. | COMPONENT COOLING WATER PUMPS | 25 | IWD-5223 (a) | 165 | I | $P_{SV}$ = 150 |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 8. | COMPONENT COOLING WATER HEAT EXCHANGERS (SHELL SIDE) | 25 | IWD-5223 (a) | 165 | I | $P_{SV}$ = 150 |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 9. | COMPONENT COOLING WATER SURGE TANK | 25 | IWD-5223 (b) | TANK FILLED | I | TEST CONDUCTED WITH SURGE TANK FILLED TO NORMAL LEVEL |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 10. | COMPONENT COOLING WATER SUCTION & DISCHARGE PIPING, HEADERS A, B & C, SUPPLY & RETURN PIPING FROM COMPONENTS WITH THE EXCEPTION OF ITEM NUMBER 11 | 25,32 | IWD-5223 (a) | 165 | I | $P_{SV}$ = 150 |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 11. | REACTOR COOLANT PUMP THERMAL BARRIER CCW RETURN & SUPPLY FROM CHECK VALVES, SPEC K17 | 29 | IWD-5223 (a) | 3106 | I | $P_{SV}$ = 2485 |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 12. | CONDENSATE STORAGE TANK AND UNISOLABLE PIPING | 33 | IWD-5223 (b) | TANK FILLED | I | |
| | | | IWD-5221/5222 | INS/FUNCT | P | |

TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS-CLASS 3

ADDENDA 1 REV. 4

SYSTEM PRESSURE - TEST SUMMARY
TABLE: 5.3


| | COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET NO. (1) | CODE REQUIREMENT (2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ (4) | REMARKS (5) (X) From Footnote Page 1 of 1 |
|---|---|---|---|---|---|---|
| 13. | FIRE WATER TRANSFER TANK | 33 | IWD-5223 (b) | TANK FILLED | I | |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 14. | MAKEUP WATER TRANSFER PUMPS AND SUCTION PIPING | 33,36 | IWD-5223 (b) | TANK FILLED | I | REQUEST FOR RELIEF #1; NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS; CONDENSATE STORAGE TANK |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 15. | MU WATER TRANSFER PUMPS DISCHARGE PIPING | 33,36 | IWD-5223 (a) | INS/FUNCT | I | NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 16. | CCW AND SPENT FUEL PIT SYSTEM PRIMARY WATER MAKEUP PIPING | 24,25 33,34 | IWD-5223 (a) | INS/FUNCT | I | NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 17. | AUXILIARY SALTWATER PUMP SUPPLY TO CCW HEAT EXCHANGERS | 35 | IWD-5223 (a) | INS/FUNCT | I | REQUEST FOR RELIEF #4; TESTED AT MAX PUMP DISCH PRESSURE |
| | | | IWD-5221/5222 | INS/FUNCT | P | REQUEST FOR RELIEF #4 |
| 18. | COMPONENT COOLING WATER HEAT EXCHANGERS TUBE SIDE | 35 | IWD-5223 (a) | INS/FUNCT | I | TESTED AT MAX PUMP DISCH PRESSURE |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 19. | CCW HEAT EXCHANGERS SALTWATER OUTLET PIPING | 35 | IWD-5223 (c) | NONE REQ'D | - | OPEN-ENDED DISCHARGE TO OCEAN |
| | | | IWD-5221/5222 | INS/FUNCT | P | REQUEST FOR RELIEF #4 |

TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS-CLASS 3

REV. 4 ADDENDA 1

SYSTEM PRESSURE - TEST SUMMARY
TABLE: 5.3


| | COMPONENT OR PIPING SYSTEM DESCRIPTION | SHEET NO. (1) | CODE REQUIREMENT (2) | REQUIRED TEST PRESS (PSIG) (3) | TEST FREQ (4) | REMARKS (5) |
|---|---|---|---|---|---|---|
| | | | | | | (X) From footnote page 1 of 1 |
| 20. | DIESEL ENGINE JACKET WATER COOLING SYSTEM | 37 | IWD-5223 (a) | 7.5 | I | $P_{sv}$ = 6 |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 21. | SPENT FUEL POOL PUMPS AND SUCTION PIPING | 24 | IWD-5223 (a) | POOL FILLED | I | REQUEST FOR RELIEF #1; NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS; SPENT FUEL POOL |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 22. | SPENT FUEL POOL PUMPS DISCHARGE PIPING THROUGH SFP HEAT EXCHR. TO SPENT FUEL POOL | 24 | IWD-5223 (a) | INS/FUNCT | I | NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS. |
| | | | IWD-5221/5222 | INS/FUNCT | P | |
| 23. | RAW WATER STORAGE RESERVOIR TO AUXILIARY FEEDWATER PUMPS SUCTION | 3,36 37,38 39 | IWD-5223(b)&(c) | INS/FUNCT | I | NO SAFETY VALVE IN SYSTEM - TESTED AT NORMAL OPERATING CONDITIONS. (RAW WATER STORAGE RESERVOIR) |
| | | | IWD-5221/5222 | INS/FUNCT | P | |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS

REQUEST FOR RELIEF FROM CODE REQUIREMENTS
REV. 4

ADDENDA 1 SYSTEM PRESSURE
TABLE 5.4A TEST SUMMARY


| NO. | SYSTEM OR COMPONENT DESCRIPTION | CODE CLASS | SUM. ITEM NO. | BASIS FOR REQUESTING RELIEF | TESTING IN LIEU OF REQUIREMENTS | TESTING SCHEDULE |
|---|---|---|---|---|---|---|
| 1 | CENTRIFUGAL TYPE PUMPS - VARIOUS | 2<br><br><br><br>3 | 19<br>24<br>53<br>4<br>14 | PUMP MECHANICAL SEALS WILL NOT PERMIT HYDRO PRESSURES ABOVE SUCTION PIPING TEST PRESSURE. | ESTABLISH HYDRO BOUNDARY IN ACCORDANCE WITH 1980 ASME SECTION XI IWA-5224 (d). | TESTING TO BE SPECIFIED UNDER TEST FREQUENCY IN THE SUMMARY. |
| 2 | DELETED | | | | | |
| 3 | DELETED | | | | | |
| 4 | EMBEDDED AUXILIARY SALTWATER PIPING | 3 | 17<br>19 | THE MAJORITY OF ASW PIPING IS UNDERGROUND AND NOT ACCESSIBLE FOR INSPECTION AND/OR TESTING. PRESERVICE TESTING WAS NOT REQUIRED BY CONSTRUCTION CODE. | VISUAL LEAK TEST OF EXPOSED PORTIONS OF SYSTEM DURING SYSTEM PRESSURE TESTS AS SPECIFIED IN THE SUMMARY<br><br>PERIODIC PUMP TESTING WILL VERIFY UNIMPAIRED FLOW THROUGH THE INACCESSIBLE PORTIONS OF THE SYSTEM. | EACH INSPECTION INTERVAL<br><br>TESTING TO BE AS SPECIFIED IN THE PUMP INSERVICE TESTING PROGRAM. |
| 5 | CLASS 2 SAFETY INJECTION, RESIDUAL HEAT REMOVAL, RCP SEAL INJECTION, CHARGING AND BORON INJ PIPING | 2 | 15<br>23<br>26<br>34<br>38<br>39<br>49<br>50<br>52 | SOME OF THE PIPING IS NOT ISOLABLE FROM THE CLASS 1 PIPING. | THE UNISOLABLE PORTIONS WILL BE TESTED AT TEST PRESSURES DETERMINED BY THE CLASS 1 REQUIREMENTS. | TESTING TO BE AS SPECIFIED UNDER TEST FREQUENCY IN THE SUMMARY. |

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS

REQUEST FOR RELIEF FROM CODE REQUIREMENTS
REV. 4

ADDENDA 1
TABLE 5.4A

SYSTEM PRESSURE TEST SUMMARY


| NO. | SYSTEM OR COMPONENT DESCRIPTION | CODE CLASS | SUM. ITEM NO. | BASIS FOR REQUESTING RELIEF | TESTING IN LIEU OF REQUIREMENTS | TESTING SCHEDULE |
|---|---|---|---|---|---|---|
| 6. | RCP SEAL RETURN PIPING FROM 8141A,B,C,D, TO THE RCP SEALS | 2 | 12 | PIPING IS NOT ISOLABLE FROM THE RCP SEALS AND CANNOT BE INCLUDED IN THE HYDROSTATIC PRESSURE TEST BOUNDARY. THE PIPING IS PRESSURIZED DURING NORMAL REACTOR OPERATION AND ANY LEAKAGE WOULD BE DETECTED DURING OPERATION. | NONE | NONE |
| 7. | RHR PUMP SUCTION FROM CONTAINMENT SUMPS | 2 | 41 | PIPING IS OPEN ENDED TO THE CONTAINMENT AND CAN NOT BE ISOLATED TO PERFORM PRESSURE TESTS. | NONE | NONE |
| 8. | NON-SAFETY RELATED SYSTEMS CONTAINMENT PENETRATIONS EXCEPT REFUELING FUEL TRANSFER TUBE. | 2 | VARIOUS | SEE PAGES 3 THRU 9 OF OF THIS TABLE. | | |
| 9. | FUEL TRANSFER TUBE TO REFUEL CANAL | 2 | 78 | NON-SAFETY RELATED SYSTEM, AS ABOVE. LINE IS INACCESSIBLE, ENCASED IN CONCRETE. | TEST OF INTEGRITY OF O-RING SEAL AT FLANGE | EVERY 3 1/3 YEARS |

A comparison of the requirements of visual examination VT-2 versus the requirements of 10 CFR APP. J local leak rate testing follows.

VISUAL EXAMINATION, VT-2

IWA-2212 Visual Examination General Requirements

(a) The VT-2 visual examination shall be conducted to locate evidence of leakage from pressure retaining components, or abnormal leakage from components with or without leakage collection systems as required during the conduct of system pressure or functional test.

(b) The VT-2 visual examination shall be conducted in accordance with IWA-5241 and IWA-5242 (see below).

NOTE: IWA-5241 and IWA-5242 clearly connotes liquid testing although a pneumatic test may be substituted by IWA-5211(e).

IWA-5241 Noninsulated Components

(a) The visual examination, VT-2, shall be conducted by examining the accessible external exposed surfaces of pressure retaining components for evidence of leakage.

(b) For components whose external surfaces are inaccessible for direct visual examination, VT-2, only the examination of surrounding area, including floor areas or equipment surfaces located underneath the components, for evidence of leakage shall be required.

IWA-5242 Insulated Components

(a) The visual examination, VT-2, may be conducted without the removal of insulation by examining the accessible and exposed surfaces and joints of the insulation. Essentially vertical surfaces of insulation need only be examined at the lowest elevation where leakage may be detectable. Essentially horizontal surfaces of insulation shall be examined at each insulation joint.

(b) For components whose external insulation surfaces are inaccessible for direct examination, only the examination of surrounding area, including floor areas or equipment surfaces located underneath the components, for evidence of leakage, or other areas to which such leakage may be channeled, shall be required.

(c) Discoloration or residue on surfaces examined shall be given particular attention to detect evidence of boric acid accumulations from borated reactor coolant leakage.

NOTE: There is no requirement to remove insulation and a safety caution is invoked against removing insulation.

10CFR50 APP. LOCAL LEAK RATE TESTING (TYPE C)

Type "C" test methods are similar to those described in ASME Section XI IWV-3424, except that the method, pressure, Acceptance Criteria, and schedule is specified and is in more detail.

IWV-3424 Seat Leakage Measurement

Valve seat leakage may be determined by one of the following:

(a) Draining the line, closing the valve, bringing one side to test pressure, and measuring leakage through a downstream tell-tale connection, or

(b) By measuring the feed rate required to maintain pressure between two valves or between two seats of a gate valve, provided the total apparent leak rate is charged to the valve or gate valve seat being tested, and that the conditions required by IWV-3423 (valve pressure test direction and exceptions) are satisfied.

DISCUSSION

LLRT is an instrumented test measuring leakage ($\Delta P$) throughout the entire test boundary, including the penetration valves and the pipe segment inside the penetration itself. The VT-2 examination only checks the accessible outside surface of the pipe (or floors underneath) for evidence of leakage that is visually apparent.

NOTE: Although the ILRT examination demonstrates the collective integrity of the entire containment structure credit is not requested for these type "A" test which are performed at least three times each ten year interval.

JUSTIFICATION

The lines on pages 7 through 9 are classified as ASME code class 2 solely because they penetrate containment and constitute part of the containment pressure boundary. They have no other safety related function. These lines can be considered in three categories:

1. Those that operate at 50 psi or less (See Pages 7 and 8). The scheduled Appendix J local leak rate tests (LLRT) at 50 psi, which are conducted at least once every 3 1/3 years, fully demonstrate all aspects of the components safety related containment integrity function. PG&E requests to substitute the LLRT for the VT-2 examination in these cases. If excessive leakage is discovered during the LLRT additional testing will be performed as necessary to identify the location of the leakage. This testing may be visual examination following application of leak detection fluid (snoop), extension of the test boundary to eliminate boundary valve leakage, use of ultrasonic leak detection equipment to detect valve seat leakage or other means. Appropriate repairs in accordance with ASME Section XI requirements will be made, and the LLRT will be reperformed until successful test results are obtained.

2. Those that are not normally in service, but may see operating pressures greater than 50 psi (See Page 9) during the occasions they are in use. These lines would nominally be required to have a system functional test at normal operating pressure once each 3 1/3 years. The concern is that since these lines can see pressures greater than 50 psi, a leak may develop at this higher pressure which would subsequently degrade the containment integrity function. For lines 1679, 3001 and 3729, which also receive the Appendix J LLRT tests at least once every 3 1/3 years, PG&E believes that a VT-2 examination during a system functional test once each 10 years adequately demonstrates system integrity at the higher operating pressure, while maintaining the plant's ALARA goals. PG&E therefore requests that the time period of the system functional test for these lines be increased from 3 1/3 to 10 years. The remainder of lines in this category (3935, 749, 2993, 4663, 3941) should be tested with the Appendix J LLRT each 3 1/3 years. The specific reasons for which PG&E requests to substitute LLRT for periodic system functional tests follow:

   Line 3935: This line is isolated during all operating modes, and has never been in operation. Any existing leaks would be identified by LLRT and the line's integrity would not be challanged by system pressure until the next test.

   Line 749: This line is seldom operated, and when in service normally sees only 27 psi, although the design maximum is 63 psi. The LLRT at 50 psi guarantees line integrity at nearly double its normal pressure.

   Line 2993: This line operates only in mode 6, and its normal pressure is only 7 psi, although the design maximum is 54 psi. The LLRT at 50 psi guarantees its integrity at over seven times its normal pressure.

   Line 4663: This system normally operates at less than 50 psi, although the design maximum is 80 psi. Again the LLRT assures line integrity; and the code examination would be based on the lower normal operating pressure.

Line 3941: This line is not in service in modes 1-4 and has strict administrative controls for its use. Containment integrity is not applicable when operating in modes 5-6.
A pressure test using water could cause the following problems:
1.) Potential plant trip due to moisture in instrument air lines if any leaks by or does not get removed.
2.) Put water into the supply air to safety related equipment thereby damaging components.
3.) Get into the service air line and cause corrosion.
The LLRT is as effective for this system as the VT-2 examination, considering the limitations to VT-2 and normally isolated condition of the line.

3. Those that are normally in service at a pressure greater than 50 psi (See Page 9). These lines would nominally be required to have a hydrostatic test at 1.1 times the relief valve setpoint for that portion of the system, once each 10 years. Since all of the lines in this category are supply lines into containment, failure of these systems could result in;

a. leakage of the process fluid/gas into containment due to the greater system pressure than containment maximum pressure.

b. leakage of the process fluid outside containment, again due to the greater system pressure.

Neither of these conditions would result in containment leakage to the environment. Also, since the maximum pressure required for the safety related containment integrity function is less than 50 psi, the normal system pressure effectively constitutes a hydrostatic test for these lines. Furthermore, these lines again receive the Appendix J LLRT tests at least once each 3 1/3 years. PG&E therefore, requests that the system pressure requirement for these lines be reduced from 1.1 times the relief valve setpoint to the normal operating pressure of the system.

Additionally for line 531, a pneumatic hydrostatic test at 1100 psi (RV-290 setpoint is 1000 psi) would create the potential for serious injury to examination personnel. Since the line is continuously pressurized with 900 psi nitrogen, leakage would be continuously noticeable due to loss of inventory.

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS

REQUEST FOR RELIEF FROM CODE REQUIREMENTS
MAXIMUM OPERATING PRESSURE ≤ 50#
REQUEST FOR RELIEF #8
REV. 4

ADDENDA 1
TABLE 5.4A

SYSTEM PRESSURE
TEST SUMMARY


| TEST NO. | SYSTEM OR COMPONENT DESCRIPTION | LINE | SIZE | FLUID | NORM PRESS | MAX PRESS | OPERAT Y/N | CODE REQ SF/HYD[1] | TESTING IN LIEU OF REQUIREMENTS | TESTING SCHEDULE |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | PZR QUENCH TK GAS ANALYZER | 1163 | 3/8 | N2 | 20 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SI PP 1-2 DISCH LINE RV | 2572 | 1 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | CNT SPRAY PPS DISCH RV OUT PRT | 2518 | 1 | WTR | 0 | 9 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | CHG PPS SUCT RV DISCH | 1459 | 1 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SIS RV OUTLET HDR TO PRT | 2999 | 4 | WTR | 3 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SIS RV OUTLET HDR TO PRT | 2998 | 4 | WTR | 3 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SI PPS SUCT RV OUT | 2061 | 1 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | RHR HT EXCHR 2 OUT RV | 2004 | 3 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | RHR HT EXCHR 1 OUT RV | 2003 | 3 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SIS PP 1-1 DISCH LINE RV | 3851 | 1 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 73 | SIS PPS RECIRC DISCH LINE RV | 3852 | 1 | WTR | 0 | 15 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 86 | REACT COOL DRN TK VENT | 525 | 3/4 | GAS | 1.5 | 30 | Y | HYD | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 87 | REACT COOL DRN TK GAS ANAL | 526 | 1/2 | AIR | 1.5 | 30 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 89 | CHPS AIR SUP FANS 1&2 DISCH. PENE 83 IN. | 4382 | 4 | AIR | 2.8 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 89 | CHPS AIR SUP FANS 1&2 DISCH. PENE 83 IN. | 4386 | 4 | AIR | 2.8 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 89 | CHPS AIR SUP FANS 1&2 DISCH. PENE 83 IN. | 4388 | 4 | AIR | 2.8 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |

[1] SF = SYSTEM FUNCTIONAL @ NOP @ 3 1/3 YRS.
HYD = HYDRO @ 1.1 X PSV @ 10 YRS.

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS

REQUEST FOR RELIEF FROM CODE REQUIRFMENTS
MAXIMUM OPERATING PRESSURE ≤ 50#
REQUEST FOR RELIEF #8
REV. 4

ADDENDA 1 SYSTEM PRESSURE
TABLE 5.4A TEST SUMMARY


| TEST NO. | SYSTEM OR COMPONENT DESCRIPTION | LINE | SIZE | FLUID | NORM PRESS | MAX PRESS | OPERAT Y/N | CODE REQ SF/HYD[1] | TESTING IN LIEU OF REQUIREMENTS | TESTING SCHEDULE |
|---|---|---|---|---|---|---|---|---|---|---|
| 89 | CHPS AIR SUP FANS 1&2 DISCH. PENE 83 IN. | 4389 | 4 | AIR | 2.8 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 89 | CHPS AIR SUP FANS 1&2 DISCH. PENE 83 IN. | 4387 | 4 | AIR | 2.8 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 90 | CHPS EXH AIR FILT 2 INLET | 4390 | 4 | AIR | 5 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 91 | CHPS EXH AIR FILT 2 INLET | 4395 | 4 | H2 | 0 | 20 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 92 | CONTAINMENT VACUUM RELIEF | 647 | 12 | AIR | 0 | 18 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 93 | CONTAINMENT PURGE OUT | K2 | 48 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 94 | CONTAINMENT PURGE IN | K2 | 48 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 95 | INCORE CHILLER WATER RTN | 3936 | 2 | WTR | 25 | 25 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 96 | INCORE CHILLER WATER SUPPLY | 3937 | 2 | WTR | 25 | 25 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 97 | CONTAINMENT AIR SAMPLE INLET | 3837 | 1 | AIR | 0 | 34 | Y | HYD | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 98 | CONTAINMENT AIR SAMPLE RETURN | 3838 | 1 | AIR | 0 | 34 | Y | HYD | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 99 | POST-LOCA SAMP CNT AIR RTN | 5190 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 100 | POST-LOCA SAMP CNT AIR SUP | S.38 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 101 | HYD MON CEL 82 CNT AIR SUP | 4633 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 102 | HYD MON CEL 82 CNT AIR SUP | 4634 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 103 | HYD MON CEL 83 CNT AIR SUP | 4635 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 104 | HYD MON CEL 83 CNT AIR RTN | 4636 | 3/8 | AIR | < 50 | < 50 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |

1 SF = SYSTEM FUNCTIONAL @ NOP @ 3 1/3 YRS. HYD = HYDRO @ 1.1 X PSV @ 10 YRS.

DIABLO CANYON POWER PLANT - UNIT 2
TEN YEAR EXAMINATION SUMMARY
ASME SECTION XI SYSTEMS

REQUEST FOR RELIEF FROM CODE REQUIREMENTS
MAXIMUM OPERATING PRESSURE > 50#
REQUEST FOR RELIEF #8
REV. 4

ADDENDA 1
TABLE 5.4A

SYSTEM PRESSURE
TEST SUMMARY


| TEST NO. | SYSTEM OR COMPONENT DESCRIPTION | LINE | SIZE | FLUID | NORM PRESS | MAX PRESS (PSV) | OPERAT Y/N | CODE REQ SF/HYD[1] | TESTING IN LIEU OF REQUIREMENTS | TESTING SCHEDULE |
|---|---|---|---|---|---|---|---|---|---|---|
| 71 | PZR RELIEF TK N2 SUPPLY | 1161 | 3/4 | N2 | 108 | 145 (150) | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 72 | PRI WTR SUP TO PZR RELIEF TK | 3000 | 3 | WTR | 128 | 140 (N/A)* | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 75 | ACCUM TANKS N2 SUPPLY HDR | 531 | 1 | N2 | 900 | 1000 (1000) | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 76 | ACCUM SAMPLE HDR | 1679 | 3/8 | WTR | 650 | 650 | N | SF | SF @ NOP | EA. 10 YEARS |
| 79 | AUX STEAM CONT PENETRATION | 3935 | 2 | STM | 105+ | 140 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 80 | FIREWATER SUPPLY BEFORE CONT | 986 | 4 | WTR | 151 | 210 (N/A)* | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 81 | CONT STR SUMP PPS DISCH | 749 | 2 | WTR | 33 | 67 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 82 | REFUELING CANAL WATER INLET | 3001 | 4 | WTR | 56 | 106 | N | SF | SF @ NOP | EA. 10 YEARS |
| 83 | REFUELING CANAL WATER RETURN | 2993 | 4 | WTR | 18 | 47** | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 84 | REACT COOL DRN TK N2 SUPPLY | 527 | 3/4 | N2 | 108 | 145 (N/A)* | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 85 | POST LOCA SAMPLE & R & CAVITY SUMP | 4663 | 1/4 | WTR | 33 | 80 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 88 | REACT COOL DRN PPS DISCH HDR | 3729 | 2.5 | WTR | 76 | 129 | N | SF | SF @ NOP | EA. 3 1/3 YEARS |
| 105 | SERVICE AIR PENE HDR | 3941 | 3 | AIR | 100 | 130 | N | SF | LLRT @ 50 PSI | EA. 3 1/3 YEARS |
| 106 | INSIDE CNT INSTR AIR SUP HDR | 3242 | 2 | AIR | 100 | 110 (110) | Y | HYD | SF @ NOP | EA. 10 YEARS |
| 107 | CNT INST AIR SUP FCV-584 BP | 4353 | 1.5 | AIR | 100 | 110 (110) | Y | HYD | SF @ NOP | EA. 10 YEARS |

[1] SF = SYSTEM FUNCTIONAL @ NOP @ 3 1/3 YRS. **NOP = 54 PSI IN UNIT 1 * NO RELIEF VALVE IN SYSTEM TEST @ 1.1 x NOP
HYD = HYDRO @ 1.1 X PSV @ 10 YRS. + LINE HAS NEVER BEEN IN SERVICE