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REVISION SUMMARY SHEET

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SYSTEM PRESSURE TESTING
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Rev.	Date	Summary
PR-01	18-1 to 18-2	2 (Deleted)	2/21/94	Pressure testing category and item numbers.
PR-02	18-3 to 18-4	0	1/27/92	System leakage test pressure for the disassembly and reassembly of Class 1 mechanical connections.
PR-03	18-5 to 18-8.2	1	11/26/92	Exemption from pressure testing Reactor Vessel Head Flange Seal Leak Detection System.
PR-04	18-9 to 18-10	0	1/27/92	Alternate test level for Standby Liquid Control (SBLC) tank hydrostatic test.
PR-05	18-11 to 18-14	0	1/27/92	Alternate test level for Isolation Condenser (shell side) hydrostatic test.
PR-06	18-15 to 18-17	0	1/27/92	Alternate testing for the Isolation Condenser tubes.
PR-07	18-18 to 18-20	0	1/27/92	Alternate frequency for testing the Isolation Condenser shell side vent.
PR-08	18-21 to 18-23	1	11/26/92	Reduced pressure hydrostatic testing for Containment Cooling Service Water, Diesel Generator Cooling Water, Control Room HVAC Service Water Piping and Service Water supply to ECCS room coolers.
PR-09	18-24 to 18-25	0	1/27/92	Alternate testing for Low Pressure Coolant Injection heat exchanger tubes.
PR-10	18-26 to 18-28	0	1/27/92	Reduced pressure testing for the Containment Cooling Service Water side of the Low Pressure Coolant Injection heat exchanger.
PR-11	18-29 to 18-30	1	8/6/93	Alternate testing for Core Spray and Low Pressure Coolant Injection pump motor coolers.
PR-12	18-31 to 18-33	0	1/27/92	Alternate testing for High Pressure Coolant Injection Turbine and connected steam inlet and discharge piping.
PR-13	18-34 to 18-36	0	1/27/92	Alternate testing for local instrumentation requiring isolation during system hydrostatic testing.
PR-14	18-37 to 18-38	1	2/21/94	Alternate testing for Class 1, Class 2 and Class 3 repaired/replaced components.
PR-15	18-39 to 18-40	1 (Deleted)	11/26/92	Definition of Pressure Retaining Boundary for System Leakage Test.

SYSTEM PRESSURE TESTING
RELIEF REQUEST INDEX/SUMMARIES

Relief Request	Page(s)	Rev.	Date	Summary
PR-16	18-41 to 18-45	0	11/26/92	Alternate testing for Main Steam (MS) Safety and Relief Valve discharge piping.
PR-17	18-46 to 18-47	0	11/26/92	Alternate Testing for HPCI Lube Oil Cooler and Gland Seal Condenser Tubing.
PR-18	18-48 to 18-50	0	2/21/94	Alternate Inspection for Bolted Connections Found Leaking During System Pressure Testing.
PR-19	18-51 to 18-53	0	10/17/94	Alternate Pressure Testing for Repaired or Replaced Main Steam Line Drains.

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COMPONENT IDENTIFICATION

Code Class:	1
References:	IWA-5214 IWB-5222(a)
Examination Category:	B-P
Item Numbers:	B15.ST
Description:	Alternate Pressure Testing for Repaired or Replaced Main Steam Line Drains
Component Numbers:	Line Numbers: 2-3007A-1 1/2"-B, 2-3007B-1 1/2"-B, 2-3007C-1 1/2"-B, 2-3007D-1 1/2"-B and 2-3007-2"-B

CODE REQUIREMENTS

IWA-5214 requires a system hydrostatic test be performed subsequent to the repair or replacement of a component. The pressure of the hydrostatic test must comply with the system test pressure requirements specified in IWB-5222(a).

IWB-5222(a) states that the hydrostatic test shall be performed at a pressure as specified in table IWB-5222-1, reproduced below:

Test Temperature, °F	Test Pressure[1]
100 or less	1.10 P_o
200	1.08 P_o
300	1.06 P_o
400	1.04 P_o
500 or greater	1.02 P_o

1) For Dresden Station Unit 2 P_o = 1005 psig

BASIS FOR RELIEF

The main steam drain lines required replacement during the current Unit 2 forced outage D2F23. These lines are ISI Class 1 and are not isolable from the reactor vessel. A hydrostatic test that would challenge these lines would require the pressurization of the reactor vessel and all attached piping up to the first available isolation valve. No other work has been performed during this forced outage on non-isolable components that require a system hydrostatic test.

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BASIS FOR RELIEF (Con't)

The performance of a reactor vessel hydrostatic test is a complex evolution. To perform the test requires substantial work including extensive equipment outages, the flood up of the vessel and main steam lines, gagging of Main Steam safety valves, and installation of set point tested relief valves for overpressure protection. The performance of all these activities, the required inspection and the subsequent drain down of vessel and return of equipment to service requires approximately four days to complete with a total personnel exposure of approximately 2 Person-Rem. Therefore, the performance of the hydrostatic test would have a significant impact on the unit's critical path time and personnel exposure.

Performance of a visual exam during normal start up is possible, however, the test can not be performed at the required test pressure of 1025 psig (1.02 x P_o for a test performed at greater than 500°F). During normal unit startup, the Electro-Hydraulic Control System precludes a reactor pressure above 950 psig without significant increases in reactor power. The dose levels in the Drywell at full power are prohibitive and prevent a drywell entry by plant personnel.

A drywell entry to inspect for leakage can be performed at 920 psig which is associated with approximately 15% rated reactor power. This inspection is considered equivalent to or better than an elevated pressure hydrostatic test because the examination conducted at 920 psig on unit startup will provide the opportunity to visually examine the welded connections while the system experiences a higher level of stress due to increased thermal loads.

The elevated pressure hydrostatic test would be performed at a pressure of approximately 1105 psig (1.10 x P_o) but only a temperature of approximately 190° F and would have the main steam drain line and main steam line isolated at the inboard isolation valve. The 920 psig leakage test performed during startup would be performed at a system temperature in excess of 500° F with the main steam isolation valves open but the main steam drain line closed.

The significantly higher stresses experienced in the drain lines during normal startup is due in large part to the sizable thermal growth caused by both the increased test temperature (> 500° F versus 190° F) and by the change in line-up which will subject more of the main steam line to the 500° F temperature. This in turn creates a large differential thermal expansion between the main steam line and the main steam line drain resulting in increased pipe stresses. The difficulties encountered when performing a vessel hydrostatic test are prohibitive when weighed against the benefits. Industry experience, which is corroborated by Dresden Station experience shows that most through wall leakage is detected during system operation as opposed to during elevated pressure tests.

In addition to the performance of the 920 psig system pressure test Dresden Station will ensure that the NDE of welds is performed in accordance with the methods and acceptance criteria of Subsection NB of the 1992 Edition of ASME Section III to ensure the integrity of the welds prior to the performance of the pressure test.

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BASIS FOR RELIEF (Con't)

Based on the above, Dresden Station requests relief from the ASME Section XI requirements for the performance of an elevated pressure hydrostatic test subsequent to the welded repair/replacement of the Unit 2 Main Steam line drains.

PROPOSED ALTERNATE PROVISIONS

As an alternate examination, Dresden Station will perform a system leakage test at 920 psig during unit startup.

Additionally, Dresden Station will perform weld NDE in accordance with the methods and acceptance criteria of Subsection NB of the 1992 Edition of ASME Section III.

APPLICABLE TIME PERIOD

Relief is requested for the hydrostatic testing associated with the replacement of the non-isolable Dresden Unit 2 Main Steam line drains performed during the Dresden forced outage D2F23. The normal system leakage test performed at 1005 psig will be completed at the end of the D2R14 refuel outage.