



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ENCLOSURE 1

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
OF THE THIRD TEN-YEAR INTERVAL INSERVICE INSPECTION PROGRAM PLAN
AND ASSOCIATED REQUESTS FOR RELIEF
FOR
COMMONWEALTH EDISON COMPANY
DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
DOCKET NOS. 50-237 AND 50-249

1.0 INTRODUCTION

The Technical Specifications (TS) for Dresden Nuclear Power Station, Units 2 and 3, state that the inservice inspection and testing of the American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 components shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code and applicable Addenda as required by 10 CFR 50.55a(g), except where specific written relief has been granted by the Commission pursuant to 10 CFR 50.55a(g)(6)(i). 10 CFR 50.55a(a)(3) states that alternatives to the requirements of paragraph (g) may be used, when authorized by the NRC, if (i) the proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety.

Pursuant to 10 CFR 50.55a(g)(4), ASME Code Class 1, 2, and 3 components (including supports) shall meet the requirements, except the design and access provisions and the preservice examination requirements, set forth in the ASME Code, Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," to the extent practical within the limitations of design, geometry, and materials of construction of the components. The regulations require that inservice examination of components and system pressure tests conducted during the first ten-year interval and subsequent intervals comply with the requirements in the latest edition and addenda of Section XI of the ASME Code incorporated by reference in 10 CFR 50.55a(b) on the date 12-months prior to the start of the 120-month interval, subject to the limitations and modifications listed therein. The applicable edition of Section XI of the ASME Code for the Dresden Nuclear Station, Units 2 and 3, third ten-year inservice inspection (ISI) interval is the 1986 Edition. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of the ASME Code incorporated by reference in 10 CFR 50.55a(b) subject to the limitations and modifications listed therein and subject to Commission approval. However, the licensee has prepared the Dresden Nuclear Station, Units 2 and 3, third ten-year interval inservice

inspection program plan to meet the requirements of the 1989 Edition of the ASME Code.

Pursuant to 10 CFR 50.55a(g)(5), if the licensee determines that conformance with an examination requirement of Section XI of the ASME Code is not practical for its facility, information shall be submitted to the Commission in support of that determination and a request made for relief from the ASME Code requirement. After evaluation of the determination, pursuant to 10 CFR 50.55a(g)(6)(i), the Commission may grant relief and may impose alternative requirements that are determined to be authorized by law, will not endanger life, property, or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed. In a letter dated August 13, 1993, Commonwealth Edison Company (CECo, the licensee) submitted the Dresden Nuclear Power Station, Units 2 and 3, third ten-year inservice inspection (ISI) program plan, Revision 2, associated request for relief and alternatives.

2.0 EVALUATION AND CONCLUSIONS

The staff, with technical assistance from its contractor, the Idaho National Engineering Laboratory (INEL), has evaluated the information provided by the licensee in support of its third ten-year interval inservice inspection program plan and associated requests for relief and alternatives. Based on the information provided, the staff adopts the contractor's conclusions and recommendations presented in the Technical Evaluation Report (TER) attached with the exception of the conclusion for the alternative contained in Request for Relief No. PR-02.

The Dresden Nuclear Power Station, Units 2 and 3, third ten-year interval program plan, Revision 2, is in compliance with the Code, except the portions of the main steam system from the outboard isolation valves and the residual heat removal piping that feeds the reactor pressure vessel (RPV) head spray (Drawing ISI-127). The licensee has identified these portions of the systems as non-classed therefore, the two systems do not meet the intent of Regulatory Guide 1.26, Quality Group Classification and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants. The licensee needs to address this issue either by implementing examination sample size and weld selection of the above systems or by submitting to the NRC its bases for omitting these systems.

The staff has taken exception to the contractor's recommendation to deny the authorization of the licensee's proposed alternative contained in Request for Relief No. PR-02. Compliance with the Code required system leakage test would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. For the licensee to perform the Code required test it would require that the vessel be flooded up, approximately 380 valves taken out-of-service, and the main steam safety valves to be gagged. In addition, there would be a total personnel exposure of approximately 2.5 man-rem. The licensee has proposed to perform a system

leakage test at 920 psig in lieu of 1005 psig required by the Code when an unisolable Class 1 mechanical connection in the drywell has been disassembled and reassembled either (i) subsequent to performance of the system pressure test conducted near the end of each refueling outage, or (ii) during a forced outage in the course of an operating cycle. The licensee's proposed alternative will provide a reasonable assurance of operational readiness of the Class 1 mechanical connections located in the drywell. Therefore, the proposed alternative contained in Request for Relief No. PR-02 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) with the provision that it applies only to Class 1, Category B-P, Item Nos. B15.50, B15.60, and B15.70 (Piping, Pumps, and Valves) mechanical connections located in the drywell.

Requests for Relief Nos. CR-06, CR-10, CR-16, PR-01, and PR-14 are denied. By letter dated February 24, 1994, the licensee withdrew the above Relief Requests. Relief No. CR-04 is granted with conditions, and the alternative contained in Request for Relief No. CR-09 is authorized pursuant to 10 CFR 50.55a(a)(3)(ii) until to December 31, 1994. Requests for Relief Nos. CR-06, CR-07, CR-10, CR-11, CR-13, CR-15, CR-16, PR-01, and PR-14 were withdrawn by the licensee, and relief is not required for Request for Relief No. PR-08. All other requests for relief are either granted pursuant to 10 CFR 50.55a(g)(6)(i) or alternatives are authorized pursuant to 10 CFR 50.55a(a)(3). For summary of relief requests see the attached Table 1.

Attachment:
Table 1

Principal Contributor: T. McLellan

Date: May 19, 1994

TABLE 1
SUMMARY OF RELIEF REQUESTS

Relief Request Number	System or Component	Code Category/ Paragraph	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
CR-01	Reactor Pressure Vessel	B-D	B3.100	Standby liquid control nozzle inner radius	Volumetric examination	VT-2 visual examination each refueling outage during system leakage or hydro tests	Granted
CR-02	Class 1 Piping	B-J	B9.10 B9.21	Class 1 pressure retaining piping inside containment penetrations - ≥NPS 4 <NPS 4	Surface and volumetric Surface examination	VT-2 visual examination each refueling outage during Class 1 leakage and hydrostatic tests	Granted
CR-03 part 1	Class 1 Piping	B-J	B9.30	Branch connection welds with reinforcement saddles	≥NPS 4 surf and vol exam <NPS 4 surf	Surface examination of reinforcement saddle welds	Granted
part 2	Class 2 Piping	C-F-1 C-F-2	C5.40 C5.80		>NPS 4-surf examination		Granted
CR-04	Ultrasonic Calibration Blocks	Appendix I II-3400		Calibration block material specification requirements	Cal blocks should be the same mat'l spec as pipe	Use of existing calibration blocks	Granted with conditions in TER
CR-05	Low Pressure Coolant Injection (LPCI) Heat Exchanger	C-A	C1.30	Tubesheet-to-shell welds: Unit 2: Unit 3: 2-1503A-1 3-1503A-1 2-1503A-2 3-1503A-2 2-1503B-1 3-1503B-1 2-1503B-2 3-1503B-2	Volumetric examination	Magnetic particle examination each inspection interval and VT-2 visual examination each inspection period	Granted

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CR-06	Class 1, 2, and 3 Component Supports	F-A	F1.10 thru F1.70	Component supports	Item numbers per Code	Alternate item numbers for Class 1, 2, and 3 component supports	Withdrawn in 2/24/94 submittal
CR-07	Reactor Pressure Vessel	B-H	BB.10				Withdrawn in 8/13/93 submittal
CR-08 part 1	Class 1 Piping	IWB-2130		All full penetration circumferential and branch connection welds in austenitic stainless steel piping \geq NPS 4 and containing reactor coolant $>200^{\circ}$ F during power operation	Sample expansion criteria per IWB-2430 and IWC-2430	Apply sample expansions per Generic Letter 88-01 and NUREG-0313	Authorized
part 2	Class 2 Piping	IWC-2430					Authorized
CR-09		IWA-2311		Ultrasonic examination personnel qualification requirements	Appendix VII as required by IWA-2311	Postpone implementation of Appendix VII requirements until December 31, 1994	Granted only until 12/31/94
CR-10	Class 3 Integral Attachments	D-B	D2.20 thru D2.60	All Class 3 integral attachments	Item numbers per Code	Use one item number to identify all Class 3 integral attachments	Withdrawn in 2/24/94 submittal

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CR-11	Snubber Repairs and Replacements	IWA-4000 -5000 -7000 IWB-4000 -5000 -7000 IWC-4000 -5000 -7000					Withdrawn in 12/4/92 submittal
CR-12 part 1	Class 1 Piping	B-F B-J	B5.10 B5.130 B9.10	All Class 1 and 2 weld overlay repaired weld joints	Surface examination and volumetric of lower 1/3 of weld material	Ultrasonic examination of weld overlay repairs per Generic Letter 88-01 (weld overlay plus outer 25% of original pipe wall) and surface examination	Authorized
part 2	Class 2 Piping	C-F-1	C5.10				Authorized
CR-13	RPV Closure Head Nuts	B-G-1	B6.10				Withdrawn in 12/4/92 submittal
CR-14	Class 1 Piping	B-J	B9.10 thru B9.40	Class 1 piping selection criteria	Table IWB-2500-1 Note 1(b)	Category B-J welds will be selected such that 25% of total non-exempt are examined. Population shall include all terminal ends connected to vessels and other components	Authorized

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Relief Request Number	System or Component	Code Category/ Paragraph	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
CR-15	Class 1 Piping	B-J	B9.11 B9.12	Cast stainless steel elbow-to-cast stainless steel pump welds: Unit 2: 202-1A-D6 Unit 3: 28-11 202-1B-D4 28-K12	Surface and volumetric examination	VT-2 visual during system pressure test conducted at the end of each refueling outage	Granted
CR-16	Class 1, 2, and 3 Piping and Associated Supports	IWA-4000		Exemption of piping, valves, and fittings SNPS 1, and their associated supports, from the requirements of IWA-4000	IWA-4000	Conduct repair activities on piping, valves, and fittings SNPS 1 and associated supports, in accordance with Commonwealth Edison's QA Program	Withdrawn in 2/24/94 submittal
PR-01	Class 1, 2, and 3 Pressure Retaining Components	B-P C-H D-B		All Class 1, 2, and 3 pressure retaining components	Item numbers per Code examination categories	Divide the system pressure testing program into two item numbers (hydrostatic and operational tests) per Code examination category	
PR-02	Class 1 Mechanical Connections	IWB-5221		Non-isolable Class 1 mechanical connections located in the drywell	VT-2 visual examination at nominal operating pressure	Perform system leakage test at reduced pressure (associated with 15% reactor power)	Authorized with Provisions in Safety Evaluation
PR-03	Reactor Pressure Vessel Flange Seal	C-H		RPV head flange seal leak detection system	Pressure test per IWC-5000	Perform VT-2 visual examination using the hydrostatic head developed during vessel flood-up	Granted

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PR-04	Class 2 Standby Liquid Control Tank	IMC-5222		Standby liquid control tank	Hydro test to the head pressure at design capacity	Perform hydrostatic test at head pressure associated with the minimum level permitted by Technical Specification	Granted
PR-05	Class 3 Isolation Condenser	IMD-5223		Isolation condenser (shell side)	Hydro test to the head pressure at design capacity	Perform hydrostatic test at head pressure associated with operating conditions.	Granted
PR-06	Class 2 Isolation Condenser	C-N	C7.10 C7.20	Inaccessible isolation condenser tubes	VT-2 visual exam of surrounding area	Monitor shell side water level during pressure test of inaccessible tubes	Granted
PR-07	Class 3 Isolation Condenser Vent Line	D-B	D2.10	Isolation condenser shell side vent line	System functional test once each period	Perform the system functional test every 5 years	Authorized
PR-08	Class 3 Piping	D-B	D2.10	Containment cooling service water, diesel generator cooling water, control room HVAC service water piping, and service water supply to ECCS room coolers	Imposed pressure will not exceed 106% of test pressure		Relief not required

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PR-09	Class 2 LPCI Heat Exchanger	C-H	C7.10 C7.20	Inaccessible low pressure coolant injection (LPCI) heat exchanger tubes	VT-2 visual exam of surrounding area	Inaccessible tubing will be 100% eddy current tested once each refueling outage	Authorized
PR-10	Class 3 CCSW Piping	D-B	D2.10	Containment cooling service water (CCSW) side of the LPCI heat exchanger	Hydro test per IWD-5223(e)	Hydrostatic test at 1.1 times the design pressure of associated piping	Granted
PR-11	Class 2 LPCI Pump Motor Coolers	C-H	C7.10 C7.20	Inaccessible core spray and LPCI pump motor cooler tubing	VT-2 visual exam of surrounding area	Measure air flow after 10 minute hold time during pneumatic test	Granted
PR-12	Class 2 HPCI Turbine and Piping	IWC-5222		High pressure coolant injection (HPCI) turbine and connected steam inlet and discharge piping	Hydro test per IWC-5222	Perform system functional test in lieu of the hydro, once each inspection interval	Granted
PR-13	Class 3 Instrument Lines	D-B	D2.10	Local instrumentation requiring isolation during system hydrostatic testing	Hydro test per IWD-5223	Perform VT-2 visual examination during system functional test	Granted
PR-14	Class 1 and 2 Pressure Retaining Components	IWA-4700		Class 1 and 2 repaired and/or replaced components	Hydro test after welded repair and/or replacement	Pressure test to nominal operating pressure after welded repair/replacement	Withdrawn in 2/24/94 submittal
PR-15	Class 1 Pressure Retaining Components	B-P					Withdrawn in 12/4/92 submittal

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Relief Request Number	System or Component	Code Category/ Paragraph	Item No.	Volume or Area to be Examined	Required Method	Licensee Proposed Alternative	Relief Request Status
PR-16	Class 3 Main Steam System Piping	D-B	D2.10	Main steam safety and relief valve discharge piping	Pneumatic test at 90% of pipe submergence head and VT-2 visual at nominal operating pressure	Perform a visual examination to detect evidence of cracks, wear, corrosion, erosion, or physical damage once each inspection period	Granted
PR-17	Class 2 HPCI Oil Cooler and Seal Condenser Tubing	C-H	C7.10 C7.20	Inaccessible HPCI lube oil cooler and HPCI gland seal condenser tubing	VT-2 visual exam of surrounding area	HPCI lube oil cooler-perform oil analysis for evidence of water Gland seal condenser-monitor hotwell level	Granted