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April 24, 2000

U.S. Nuclear Regulatory Commission  
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**DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT**  
**INSERVICE TESTING PROGRAM - SUBMITTAL OF PRESSURE TEST RELIEF**  
**REQUEST NO. 7 FOR NRC APPROVAL**

Attached is Pressure Test Relief Request No. 7 (PR-7), which requests relief from the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition, Subsection IWB-2500, Table IWB-2500-1, Category B-P, Footnote 2. Footnote 2 states that, "The pressure retaining boundary during the system hydrostatic test shall include all Class 1 components within the system boundary." A number of the Class 1 vent, drain, test, and fill piping components between 3/4 inch to 2 inch in diameter are isolated from the Primary Coolant System (PCS) when it is in its normal operating configuration. Since the Section XI hydrostatic test of the PCS is performed with the system at full temperature and pressure in its operating lineup, these piping segments are not automatically included within the pressure test boundaries. In order to perform the required test, it would be necessary to either deviate from the normal double isolation boundary configuration, or to install test connections on many of the components. Installing the test connections and performing the test on these components would have a significant dose consequence, without contributing significantly to reactor safety.

Consumers Energy Company is requesting approval to use alternative requirements in accordance with 10 CFR 50.55a(a)(3)(ii). This relief request is very similar to Relief Request ISPT-05 which was approved by the NRC on September 3, 1998, for the Watts Bar Nuclear Plant, Unit 1, Docket No. 50-390.

A047

## SUMMARY OF COMMITMENTS

This letter contains no new commitments and no revisions to existing commitments.



Nathan L. Haskell  
Director, Licensing and Performance Assessment

CC Administrator, Region III, USNRC  
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Attachment

**ATTACHMENT**

**CONSUMERS ENERGY COMPANY  
PALISADES PLANT  
DOCKET 50-255**

**April 24, 2000**

**INSERVICE TESTING PROGRAM - SUBMITTAL OF PRESSURE TEST  
RELIEF REQUEST NO. 7 FOR NRC APPROVAL**

**PR-7**

**5 Pages**

## **SYSTEM PRESSURE TESTING RELIEF REQUEST**

### **RELIEF REQUEST NUMBER PR-07**

**Code Class:** ASME Class 1

**Subject:** Pressure testing of Class 1 components.

**Component Numbers:**

ASME Code Class 1 vents, drains, test and fill piping which range in diameter from 3/4 inch to 2 inch and, for which relief is requested, as listed in the following table:

MV-PC1068	3/4"-Primary Coolant Pump P-50B DPI-0127	PID M-201-1, A-2
MV-PC1069A	3/4"-P-50B DPI-0127 Highside	PID M-201-1, A-2
MV-PC164A	3/4"-Isolation for LT-0105	PID M-201-2, A-6
MV-PC165A	3/4"-Isolation for LT-0105	PID M-201-2, A-6
MV-PC1075	3/4"-P-50C DPI-0128 Highside	PID M-201-1, A-7
MV-PC1076	3/4"-P-50C DPI-0128 Lowside	PID M-201-1, A-7
MV-PC1032B	2"-PCS Loop 2A Cold Leg Drain	PID M-201-1, A-8
MV-PC1094B	2"-Loop 1 Hot Leg Drain	PID M-201-1, C-3,4
MV-ES3091	1"-CK-3410 Test Tap Isolation	PID M-201-1, C-4
MV-PC1012	3/4"-Loop 1 SX-1012	PID M-201-1, C,D-4
MV-PC1093A	3/4"-Refueling Level Isolation	PID M-201-1, C,D-3,4
MV-PC1022B	2"-PCS Loop 1B Cold Leg Drain	PID M-201-1, D-1
MV-PC1083B	3/4"-P-50D DPI-0129 Highside	PID M-201-1, E,F-7
MV-PC1021B	2"-PCS Loop 1A Cold Leg Drain	PID M-201-1, F-1
MV-PC1061	3/4"-P-50A DPI-0126 Highside	PID M-201-1, F-1,2
MV-PC1062	3/4"-Primary Coolant Pump P-50A Discharge Pressure Tap	PID M-201-1, F-2
MV-PC1082	3/4"-Primary Coolant Pump P-50D Suction Pressure Tap Lowside	PID M-201-1, F-7
MV-PC166	Instrumentation Valve	PID M-201-1, F-7
MV-PC1033A	2"-PCS Loop 2B Cold Leg Drain	PID M-201-1, F-8
MV-PC1060B	3/4"-Reactor Vessel Head Vent	PID M-201-1, G-4
MV-PC506	3/4"-PRV-1042B Test Tap Isolation	PID M-201-2, E-6
MV-PC508	3/4"-PRV-1042B Test Tap Isolation	PID M-201-2, D-6
MV-PC510	3/4"-PRV-1043B Test Tap Isolation	PID M-201-2, D-7
MV-PC512	3/4"-PRV-1043B Test Tap Isolation	PID M-201-2, D-7
MV-PC514	2"-M0-1042A & M0-1043A Test Tap Isolation	PID M-201-2, D-6
MV-PC516	3/4"-PRV-1069 & PRV-1070 Test Tap Isolation	PID M-201-2, C-7

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MV-PC1044A	3/4"-Pressurizer Vent	PID M-201-2, D-7
MV-CVC2288	1"-Letdown Line Drain Valve	PID M-202-1, B, C-7
MV-CVC2290	1"-Letdown Line Drain Valve	PID M-202-1B, D-7,8

#### **Code Requirements:**

ASME Section XI, 1989 Edition, Subsection IWB-2500, Table IWB-2500-1, Category B-P, Footnote 2 states that, "The pressure retaining boundary during the system hydrostatic test shall include all Class 1 components within the system boundary."

#### **Requested Relief:**

This relief is requested pursuant to 10 CFR 50.55a(a)(3)(ii) since compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. The relief requested is that the proposed alternative be accepted in lieu of the specified ASME Section XI-1989 Code requirement for the hydrostatic test of the ASME Code Class 1 vents, drains, test and fill piping which range in diameter from 3/4 inch to 2 inch.

#### **Proposed Alternative:**

The specified ASME Code Class 1 vents, drains, test and fill piping which range in diameter from 3/4 inch to 2 inch piping segments shall be visually examined following each refueling outage for leakage and evidence of leakage during the PCS leakage test. This visual examination is conducted with the PCS at normal operating temperature and pressure.

#### **Basis for Relief:**

Various piping segments are located in open-ended or capped tailpipes that serve as vent, drain, test or fill lines. Manual valves and flanges bound these piping segments to provide the design-required double isolation at the primary coolant system pressure boundary. These piping segments are not normally pressurized. Pressure testing of these piping segments at nominal operating pressure would require that the inboard isolation valve be opened when the primary coolant system (PCS) is at full temperature and pressure (2060 psia and 535°F). The action would deviate from the design requirement for double isolation valve protection. This work on high temperature components and the potential for spills when opening the system valves presents a significant risk of personnel contamination and injury.

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Pressure testing when the PCS is depressurized would require that a hydrostatic pump be connected at each segment location. However, for some segments there is no connection available and a modification for installation of a pump connection would be required. These piping segments are located in radiation areas and testing would result in significant personnel radiation exposure. A breakdown of the dose estimates for installation of test taps and performance of testing is provided below:

- A. Primary Coolant Pump Delta P, Discharge Pressure and Suction Pressure Instrument Lines. Location: 607 Containment.  
8 items at 4 person-hours per item at 50 to 100 mR/hour.
- B. Refueling Level Instrumentation Lines (LT-0105). Location: 590 Containment Air Room.  
2 items at 4 person-hours per item at 1 mR/hour.
- C. PCS Loop Cold Leg Drains. Location: 607 Containment.  
4 items at 10 person-hours per item at 60 to 100 mR/hour.
- D. Loop 1 Hot Leg Drain. Location: 607 Containment, near A Steam Generator.  
1 item at 4 person-hours per item at 150 mR/hour.
- E. CK-ES3410 Test Tap Lines. Location: 607 Containment, near A Hot Leg.  
1 item at 4 person-hours per item at 150 mR/hour.
- F. Loop 1 SX-1012 (Sample Line). Location: 590 Containment, near Clean Waste Receiver Tank T-64A.  
1 item at 4 person-hours and 25 mR/hour.
- G. Refueling Level Isolation. Location: Containment 616 to 649 Elevation.  
1 item at 4 person-hours per item at 1 to 3 mR/hour.
- H. Instrumentation Valve Line. Location: 607 Containment, near dPI-0129.  
1 item at 4 person-hours and 50 to 100 mR/hour.

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- I. Reactor Vessel Head Vent. Location: 649 Containment, near Pressurizer shed.  
  
1 item at 2 person-hours and 3 to 5 mR/hour.
- J. PRV-1042B/PRV-1043B Test Tap Isolation. Location : Containment Pressurizer shed.  
  
4 items at 2 person-hours and 20 to 30 mR/hour.
- K. MO-1042A/MO-1043A Test Tap Isolation. Location: Containment Pressurizer shed.  
  
1 item at 2 person-hours and 20 to 30 mR/hour.
- L. PRV-1069/PRV-1070 Test Tap Isolation. Location: Containment 649, near Pressurizer shed.  
  
1 item at 2 person-hours and 3 to 5 mR/hour.
- M. Pressurizer Vent. Location: Containment Pressurizer shed.  
  
1 item at 2 person-hours and 35 mR/hour.
- N. Letdown Line Drain Valves. Location: Containment Letdown Walkway.  
  
2 items at 8 person-hours per item at 15 to 35 mR/hour.

This results in a minimum of 6 REM of dose accumulation in performing these installations and tests. This data is based on estimated durations and actual survey data. These radiation exposure estimates are based on the removal of blind flanges, the installation of test flanges and the connection of a hydrostatic pump. Personnel would remain in the area to perform the test, disconnect the test equipment and reinstall the blind flange. (This evaluation does not address any risks associated with test instrument installation at reduced inventory.)

These piping segments are visually inspected each refueling outage as the PCS is returned to operation. These segments are not specifically pressurized past the first isolation valve for this inspection. With these inspections being performed approximately six times in each inspection interval, the increase in safety achieved from the required nominal operating pressure test is not commensurate with the hardship of performing such testing. In addition, testing between isolation valves is unnecessary to maintain assurance of PCS integrity, and elimination of testing does

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not degrade reactor safety. Therefore, it is requested that this relief request be approved pursuant to 10 CFR 50.55a(a)(3)(ii).

#### **Applicable Time Period:**

Relief is requested for the third ten-year Inservice Inspection Program for Palisades which concludes in August 2005. Use of this relief request requires prior NRC approval in accordance with 10 CFR 50.55a(a)(3).