August 2, 2006

ASME, Section XI, Article IWA-6000

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Palisades Nuclear Plant
Docket 50-255
License No. DPR-20

ASME Section XI Inservice Inspection 90-Day Report

Nuclear Management Company, LLC (NMC) is enclosing the 90-day report for the Palisades Nuclear Plant (PNP) Inservice Testing Program. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section XI, Article IWA-6000, requires that inservice inspection reports be submitted within 90 days following the completion of the most recent refueling outage. PNP completed a refueling outage on May 10, 2006.

Summary of Commitments

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

Paul A. Harden
Site Vice President, Palisades Nuclear Plant
Nuclear Management Company, LLC

Enclosure

CC Administrator, Region III, USNRC
Project Manager, Palisades, USNRC
Resident Inspector, Palisades, USNRC

A047

ENCLOSURE 1

NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255

August 2, 2006

INSERVICE INSPECTION (ISI) OF CLASS 1, 2 AND 3 SYSTEMS

ISI Report 3-9

123 Pages Follow

PALISADES NUCLEAR PLANT
ENGINEERING PROGRAMS DEPARTMENT

Review and Approval Summary

TITLE: ISI REPORT 3-9

Michael W. Acker July 27, 2006
ISI Engineer / MWAcker Date

B VanWagner 7/28/06
ASME Programs and Valves Supervisor / BVVanWagner Date

TH Fouty 7/31/06
Engineering Programs Manager / THFouty Date

PALISADES NUCLEAR PLANT

2006 INSERVICE INSPECTION REPORT

Submitted in accordance with the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, Article IWA-6000, 1989 Edition.

1. Date: August 2, 2006

2. Plant Owner: Consumers Energy
   212 West Michigan Avenue
   Jackson, Michigan 49201

3. Plant: Palisades Nuclear Plant
   27780 Blue Star Memorial Highway
   Covert, Michigan 49043

4. Unit No: 1

5. Commercial Service Date: December 31, 1971

6. Major Components Inspected:

Component	Manufacturer	Mfg Serial No.	State No.	National Board No.
Steam Generator	Combustion Eng	CE-70277-1	M358176M	NB22864
RPV Head	Combustion Eng	CE-66110	M96725M	NB20827

7. Completion Date for Inspections: May 10, 2006

8. Code Inspector: Kenneth L Blake

9. Authorized Inspection Agency: Hartford Steam Boiler

10. Abstract: See ISI Report

2006 INSERVICE INSPECTION 3-9
PALISADES NUCLEAR PLANT

Summary

Inservice Inspection 3-9 was conducted during the period of November 18, 2004, through May 10, 2006, in accordance with Section 5.5.7 of the Palisades Nuclear Plant Technical Specifications. The American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 1989 Edition controlled the inspections and provided the acceptance criteria for these examinations. Included in this report are three sections. Section 1 details the examinations that were performed and provides the final inspection results. Section 2 provides a listing of the repairs and replacements that have been performed over the last operating cycle and during the refueling outage. The attached NIS-2 forms document these repairs and replacements. Section 3 contains the documentation for acceptance, by analysis, for porosity which was found in a three-inch service water system weld.

Inspection Activities

This was the second examination of the third period of the third inspection interval. Areas examined during this inspection included "A" steam generator and regenerative heat exchanger welds. Various components of the primary coolant system, engineered safeguards system, main steam system, main feedwater system and support systems, as identified in the attached Non-destructive Examination (NDE) Results Summary Report, were also examined.

The examinations were performed using ultrasonic (UT), liquid penetrant (PT), radiographic (RT), and visual techniques. The examinations were conducted by the Consumers Energy non-destructive testing (NDT) services department, Westdyne, and Lambert MacGill Thomas examination personnel, using site-approved procedures. Examinations were performed by personnel qualified in the NDT process used, in accordance with the requirements of ASME Section XI, IWA-2300.

SECTION 1

EXAMINATION DETAILS AND FINAL INSPECTION RESULTS

FORM NIS-1 OWNER'S REPORT FOR INSERVICE INSPECTIONS
As required by the Provisions of the ASME Code Rules

1. Owner Consumers Energy, 212 West Michigan Ave, Jackson, MI 49201
(Name and Address of Owner)

2. Plant Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043
(Name and Address of Plant)

3. Plant Unit 1 4. Owner Certificate of Authorization (if required) n/a

5. Commercial Service Date 12/31/71 6. National Board Number for Unit NB20827

7. Components Inspected

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Steam Generator	Combustion Engineering	CE-70277-1	M358176M	NB22864
RPV Head	Combustion Engineering	CE-66110	M96725M	NB20827
	SEE "NDE RESULTS SUMMARY"			
	REPORT ATTACHED			

Note: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8½ in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and the number of sheets is recorded at the top of this form.

FORM NIS-1 (Back)

8. Examination Dates 11/18/2004 to 5/10/2006 9. Inspection Interval from 5/12/1995 to 12/12/2006

10. Abstract of Examinations. Include a list of examinations and a statement concerning status of work required for current interval. See ISI Report "NDE Results Summary"

11. Abstract of Conditions Noted
See ISI Report "NDE Results Summary"

12. Abstract of Corrective Measures Recommended and Taken
See ISI Report "NDE Results Summary"

We certify that the statements made in this report are correct and the examinations and corrective measures taken conform to the rules of the ASME Code, Section XI.

Certificate of Authorization No. (if applicable) n/a Expiration Date n/a

Date July 27 19 2006 Signed Consumers Energy By [signature] /NDE
Owner

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18, 2004 to May 10, 2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measures described in this Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions Mi. 300762
Inspector's Signature National Board, State, Province, and Endorsements

Date July 27 19 2006

(12/82)

PALISADES

NDE RESULTS SUMMARY

NIS 1

Category	System	Component ID	Disposition	Exam	Comments
Aug					
	ESS				
		ESS-24-SIS-SH1-207	Acceptable	UT/PT	
		ESS-24-SIS-SH2-207	Acceptable	UT/PT	
		ESS-6-SIS-2A1-21	Acceptable	UT/PT	
		ESS-6-SIS-2B1-27	Acceptable	UT/PT	
	FWS				
		FWS-18-FWL-1S1-245	Acceptable	UT/PT	
		FWS-18-FWL-1S1-257	Acceptable	UT/PT	
		FWS-18-FWL-1S1-258	Acceptable	UT/PT	
		FWS-18-FWL-1S1-261	Acceptable	UT/PT	
		FWS-18-FWL-2S1-262	Acceptable	UT/PT	
	MSS				
		MSS-36-MSL-1S1-216	Acceptable	UT/PT	
		MSS-36-MSL-1S1-216LDI	Acceptable	UT/PT	
		MSS-36-MSL-1S1-216LDO	Acceptable	UT/PT	
		MSS-36-MSL-1S1-216LU	Acceptable	UT/PT	
		MSS-36-MSL-1S1-217	Acceptable	UT/PT	
		MSS-36-MSL-1S1-217LD	Acceptable	UT/PT	
		MSS-36-MSL-1S1-217LUI	Acceptable	UT/PT	

Category	System	Component ID	Disposition	Exam	Comments
		MSS-36-MSL-1S1-217LUO	Acceptable	UT/PT	
		MSS-36-MSL-2S1-218	Acceptable	UT/PT	
		MSS-36-MSL-2S1-218LDI	Acceptable	UT/PT	
		MSS-36-MSL-2S1-218LDO	Acceptable	UT/PT	
		MSS-36-MSL-2S1-218LU	Acceptable	UT/PT	
		MSS-36-MSL-2S1-219	Acceptable	UT/PT	
		MSS-36-MSL-2S1-219LD	Acceptable	UT/PT	
		MSS-36-MSL-2S1-219LUI	Acceptable	UT/PT	
		MSS-36-MSL-2S1-219LUO	Acceptable	UT/PT	
		MSS-6-RVR-1S4-203	Acceptable	UT/PT	
		MSS-6-RVR-2S1-203	Acceptable	UT/PT	
		MSS-6-RVR-2S4-203	Acceptable	UT/PT	
		MSS-6-RVR-2S6-203	Acceptable	UT/PT	
		MSS-8-MSV-1S1-212	Acceptable	UT/PT	
	PCS				
		Bowl Plug SGA-1	Acceptable	BM Visual	
		Bowl Plug SGA-2	Acceptable	BM Visual	
		Bowl Plug SGB-1	Acceptable	BM Visual	
		Bowl Plug SGB-2	Acceptable	BM Visual	
		Cold Leg Charging A #1	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		Cold Leg Charging B #2	Acceptable	BM Visual	
		Cold Leg Spray CV-1057 #1	Acceptable	BM Visual	
		Cold Leg Spray CV-1057 #2	Acceptable	BM Visual	
		Cold Leg Spray CV-1059 #1	Acceptable	BM Visual	
		Cold Leg Spray CV-1059 #2	Acceptable	BM Visual	
		DPT-0112A	Acceptable	BM Visual	
		DPT-0112A/C	Acceptable	BM Visual	
		DPT-0112A/C	Acceptable	BM Visual	
		DPT-0112B	Acceptable	BM Visual	
		DPT-0112B/D	Acceptable	BM Visual	
		DPT-0112B/D	Acceptable	BM Visual	
		DPT-0112C	Acceptable	BM Visual	
		DPT-0112D	Acceptable	BM Visual	
		DPT-0122A	Acceptable	BM Visual	
		DPT-0122A/C	Acceptable	BM Visual	
		DPT-0122A/C	Acceptable	BM Visual	
		DPT-0122B	Acceptable	BM Visual	
		DPT-0122B/D	Acceptable	BM Visual	
		DPT-0122B/D	Acceptable	BM Visual	
		DPT-0122C	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		DPT-0122D	Acceptable	BM Visual	
		PCS-011 Weld 1 (DPT-0112A/C)	Acceptable	BM Visual	
		PCS-011 Weld 15 (DPT-0112A)	Acceptable	BM Visual	
		PCS-011 Weld 22 (DPT-0112A/C)	Acceptable	BM Visual	
		PCS-011 Weld 8 (DPT-0112C)	Acceptable	BM Visual	
		PCS-012 Weld 1 (DPT-0112B)	Acceptable	BM Visual	
		PCS-012 Weld 15 (DPT-0112D)	Acceptable	BM Visual	
		PCS-012 Weld 22 (DPT-0112B/D)	Acceptable	BM Visual	
		PCS-012 Weld 8 (DPT-0112B/D)	Acceptable	BM Visual	
		PCS-013 Weld 1 (DPT-0122A/C)	Acceptable	BM Visual	
		PCS-013 Weld 15 (DPT-0122C)	Acceptable	BM Visual	
		PCS-013 Weld 22 (DPT-0122A/C)	Acceptable	BM Visual	
		PCS-013 Weld 8 (DPT-0122A)	Acceptable	BM Visual	
		PCS-014 Weld 1 (DPT-0122B/D)	Acceptable	BM Visual	
		PCS-014 Weld 13 (DPT-0122B/D)	Acceptable	BM Visual	
		PCS-014 Weld 20 (DPT-0122B)	Acceptable	BM Visual	
		PCS-014 Weld 6 (DPT-0122D)	Acceptable	BM Visual	
		PCS-015 Weld 1 Drain	Acceptable	BM Visual	
		PCS-015 Weld 1 Drain	Acceptable	BM Visual	
		PCS-016 Weld 1 Drain	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		PCS-016 Weld 1 Drain	Acceptable	BM Visual	
		PCS-017 Weld 1 Drain	Acceptable	BM Visual	
		PCS-017 Weld 1 Drain	Acceptable	BM Visual	
		PCS-018 Weld 1 Drain	Acceptable	BM Visual	
		PCS-018 Weld 1 Drain	Acceptable	BM Visual	
		PCS-023 Weld 1	Acceptable	BM Visual	
		PCS-023 Weld 1	Acceptable	BM Visual	
		PCS-026 Weld 1 (SX-0112)	Acceptable	BM Visual	
		PCS-027 Weld 1 (SX-1023A)	Acceptable	BM Visual	
		PCS-035 Weld 11	Acceptable	BM Visual	
		PCS-035 Weld 12	Acceptable	BM Visual	
		PCS-036 Weld 14	Acceptable	BM Visual	
		PCS-036 Weld 15	Acceptable	BM Visual	
		PCS-037 Weld 15	Acceptable	BM Visual	
		PCS-037 Weld 16	Acceptable	BM Visual	
		PCS-038 Weld 14	Acceptable	BM Visual	
		PCS-038 Weld 15	Acceptable	BM Visual	
		PCS-040 Weld 17	Acceptable	BM Visual	
		PCS-041 Weld 48	Acceptable	BM Visual	
		PCS-042 Weld 1	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		PCS-042 Weld 10	Acceptable	BM Visual	
		PCS-042 Weld 2	Acceptable	BM Visual	
		PCS-042 Weld 3	Acceptable	BM Visual	
		PCS-042 Weld 4	Acceptable	BM Visual	
		PCS-042 Weld 5	Acceptable	BM Visual	
		PCS-042 Weld 6	Acceptable	BM Visual	
		PCS-042 Weld 7	Acceptable	BM Visual	
		PCS-042 Weld 8	Acceptable	BM Visual	
		PCS-042 Weld 9	Acceptable	BM Visual	
		PCS-043 Weld 1	Acceptable	BM Visual	
		PCS-043 Weld 10	Acceptable	BM Visual	
		PCS-043 Weld 11	Acceptable	BM Visual	
		PCS-043 Weld 12	Acceptable	BM Visual	
		PCS-043 Weld 2	Acceptable	BM Visual	
		PCS-043 Weld 3	Acceptable	BM Visual	
		PCS-043 Weld 4	Acceptable	BM Visual	
		PCS-043 Weld 5	Acceptable	BM Visual	
		PCS-043 Weld 6	Acceptable	BM Visual	
		PCS-043 Weld 7	Acceptable	BM Visual	
		PCS-043 Weld 8	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		PCS-043 Weld 9	Acceptable	BM Visual	
		PCS-12-PSL-1H1-7	Acceptable	UT	
		PCS-12-PSL-1H1-7	Acceptable	BM Visual	
		PCS-12-PSL-1H1-8	Acceptable	BM Visual	
		PCS-12-PSL-1H1-8	Acceptable	UT	
		PCS-12-SCS-2H1-1	Acceptable	BM Visual	
		PCS-12-SCS-2H1-2	Acceptable	BM Visual	
		SX-0112	Acceptable	BM Visual	
		SX-1023A	Acceptable	BM Visual	
	PZR				
		PCS-12-PSL-1H1-1	Acceptable	UT	
		PCS-12-PSL-1H1-1	Acceptable	BM Visual	
		PCS-12-PSL-1H1-2	Acceptable	BM Visual	
		PCS-12-PSL-1H1-2	Acceptable	UT	
		PCS-4-PSS-1P1-20	Acceptable	BM Visual	
		PCS-4-PSS-1P1-21	Acceptable	BM Visual	
		Pressurizer Heater Sleeves	Acceptable	BM Visual	
	RVH				
		119-01-A	Acceptable	BM Visual	
		119-01-A	Acceptable	UT	
		119-01-B	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		119-02-A	Acceptable	BM Visual	
		119-02-A	Acceptable	UT	
		119-02-B	Acceptable	BM Visual	
		119-03-A	Acceptable	BM Visual	
		119-03-A	Acceptable	UT	
		119-03-B	Acceptable	BM Visual	
		119-04-A	Acceptable	BM Visual	
		119-04-A	Acceptable	UT	
		119-04-B	Acceptable	BM Visual	
		119-05-A	Acceptable	UT	
		119-05-A	Acceptable	BM Visual	
		119-05-B	Acceptable	BM Visual	
		119-06-A	Acceptable	UT	
		119-06-A	Acceptable	BM Visual	
		119-06-B	Acceptable	BM Visual	
		119-07-A	Acceptable	UT	
		119-07-A	Acceptable	BM Visual	
		119-07-B	Acceptable	BM Visual	
		119-08-A	Acceptable	BM Visual	
		119-08-A	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		119-08-B	Acceptable	BM Visual	
		119-09-A	Acceptable	BM Visual	
		119-09-A	Acceptable	UT	
		119-09-B	Acceptable	BM Visual	
		119-10-A	Acceptable	BM Visual	
		119-10-A	Acceptable	UT	
		119-10-B	Acceptable	BM Visual	
		119-11-A	Acceptable	BM Visual	
		119-11-A	Acceptable	UT	
		119-11-B	Acceptable	BM Visual	
		119-12-A	Acceptable	BM Visual	
		119-12-A	Acceptable	UT	
		119-12-B	Acceptable	BM Visual	
		119-13-A	Acceptable	BM Visual	
		119-13-A	Acceptable	UT	
		119-13-B	Acceptable	BM Visual	
		119-14-A	Acceptable	BM Visual	
		119-14-A	Acceptable	UT	
		119-14-B	Acceptable	BM Visual	
		119-15-A	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		119-15-A	Acceptable	BM Visual	
		119-15-B	Acceptable	BM Visual	
		119-16-A	Acceptable	BM Visual	
		119-16-A	Acceptable	UT	
		119-16-B	Acceptable	BM Visual	
		119-17-A	Acceptable	UT	
		119-17-A	Acceptable	BM Visual	
		119-17-B	Acceptable	BM Visual	
		119-18-A	Acceptable	UT	
		119-18-A	Acceptable	BM Visual	
		119-18-B	Acceptable	BM Visual	
		119-19-A	Acceptable	BM Visual	
		119-19-A	Acceptable	UT	
		119-19-B	Acceptable	BM Visual	
		119-20-A	Acceptable	UT	
		119-20-A	Acceptable	BM Visual	
		119-20-B	Acceptable	BM Visual	
		119-21-A	Acceptable	UT	
		119-21-A	Acceptable	BM Visual	
		119-21-B	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		119-22-A	Acceptable	UT	
		119-22-A	Acceptable	BM Visual	
		119-22-B	Acceptable	BM Visual	
		119-23-A	Acceptable	UT	
		119-23-A	Acceptable	BM Visual	
		119-23-B	Acceptable	BM Visual	
		119-24-A	Acceptable	UT	
		119-24-A	Acceptable	BM Visual	
		119-24-B	Acceptable	BM Visual	
		119-25-A	Acceptable	BM Visual	
		119-25-A	Acceptable	UT	
		119-25-B	Acceptable	BM Visual	
		119-26-A	Acceptable	BM Visual	
		119-26-A	Acceptable	UT	
		119-26-B	Acceptable	BM Visual	
		119-27-A	Acceptable	BM Visual	
		119-27-A	Acceptable	UT	
		119-27-B	Acceptable	BM Visual	
		119-28-A	Acceptable	BM Visual	
		119-28-A	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		119-28-B	Acceptable	BM Visual	
		119-29-AR	Acceptable	UT	
		119-29-AR	Acceptable	BM Visual	
		119-29-B	Acceptable	BM Visual	
		119-30-AR	Acceptable	UT	
		119-30-AR	Acceptable	BM Visual	
		119-30-B	Acceptable	BM Visual	
		119-31-A	Acceptable	UT	
		119-31-A	Acceptable	BM Visual	
		119-31-B	Acceptable	BM Visual	
		119-32-A	Acceptable	UT	
		119-32-A	Acceptable	BM Visual	
		119-32-B	Acceptable	BM Visual	
		119-33-A	Acceptable	UT	
		119-33-A	Acceptable	BM Visual	
		119-33-B	Acceptable	BM Visual	
		119-34-A	Acceptable	UT	
		119-34-A	Acceptable	BM Visual	
		119-34-B	Acceptable	BM Visual	
		119-35-A	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		119-35-A	Acceptable	BM Visual	
		119-35-B	Acceptable	BM Visual	
		119-36-A	Acceptable	UT	
		119-36-A	Acceptable	BM Visual	
		119-36-B	Acceptable	BM Visual	
		119-37-A	Acceptable	UT	
		119-37-A	Acceptable	BM Visual	
		119-37-B	Acceptable	BM Visual	
		119-38-A	Acceptable	UT	
		119-38-A	Acceptable	BM Visual	
		119-38-B	Acceptable	BM Visual	
		119-39-A	Acceptable	UT	
		119-39-A	Acceptable	BM Visual	
		119-39-B	Acceptable	BM Visual	
		119-40-A	Acceptable	UT	
		119-40-A	Acceptable	BM Visual	
		119-40-B	Acceptable	BM Visual	
		119-41-A	Acceptable	BM Visual	
		119-41-A	Acceptable	UT	
		119-41-B	Acceptable	BM Visual	

Category	System	Component ID	Disposition	Exam	Comments
		119-42-A	Acceptable	BM Visual	
		119-42-A	Acceptable	UT	
		119-42-B	Acceptable	BM Visual	
		119-43-A	Acceptable	UT	
		119-43-A	Acceptable	BM Visual	
		119-43-B	Acceptable	BM Visual	
		119-44-A	Acceptable	BM Visual	
		119-44-A	Acceptable	UT	
		119-44-B	Acceptable	BM Visual	
		119-45-A	Acceptable	BM Visual	
		119-45-A	Acceptable	UT	
		119-45-B	Acceptable	BM Visual	
		119-46	Acceptable	BM Visual	
		119-46	Acceptable	UT	
		119-46-A	Acceptable	BM Visual	
		119-47	Acceptable	BM Visual	
		119-47	Acceptable	UT	
		119-47-A	Acceptable	BM Visual	
		119-48	Acceptable	BM Visual	
		119-48	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		119-48-A	Acceptable	BM Visual	
		119-49	Acceptable	UT	
		119-49	Acceptable	BM Visual	
		119-49-A	Acceptable	BM Visual	
		119-50	Acceptable	UT	
		119-50	Acceptable	BM Visual	
		119-50-A	Acceptable	BM Visual	
		119-51	Acceptable	BM Visual	
		119-51	Acceptable	UT	
		119-51-A	Acceptable	BM Visual	
		119-52	Acceptable	BM Visual	
		119-52	Acceptable	UT	
		119-52-A	Acceptable	BM Visual	
		119-53	Acceptable	UT	
		119-53	Acceptable	BM Visual	
		119-53-A	Acceptable	BM Visual	
		PCS-034A Weld 1	Acceptable	BM Visual	
		RPV Vent Line	Acceptable	UT	
		RPV Vent Line	Acceptable	BM Visual	

B-B

Category	System	Component ID	Disposition	Exam	Comments
	PZR				
		Pressurizer T-72 Weld 2-982A	Acceptable	UT	
	RGA				
		Regen Heat Exchanger Weld E-56A-03	Acceptable	UT	
		Regen Heat Exchanger Weld E-56A-04	Acceptable	UT	
	SG1				
		SG No.1 E-50A Weld 1-101-251	Acceptable	UT	
		SG No.1 E-50A Weld 1-1402-271	Acceptable	UT	
		SG No.1 E-50A Weld 1-1404-271	Acceptable	UT	
B-D					
	RGA				
		Regen Heat Exchanger Weld E-56A-05	Acceptable	UT	
		Regen Heat Exchanger Weld E-56A-05-IRS	Acceptable	UT	
		Regen Heat Exchanger Weld E-56A-07	Acceptable	UT	
	RGB				
		Regen Heat Exchanger Weld E-56B-05	Acceptable	UT	
		Regen Heat Exchanger Weld E-56B-05-IRS	Acceptable	UT	
		Regen Heat Exchanger Weld E-56B-07	Acceptable	UT	
	SG1				
		SG No.1 E-50A Weld 1-102-251A	Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251A-IRS	Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251B	Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251B-IRS	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		SG No.1 E-50A Weld 1-104-251	Acceptable	UT	
		SG No.1 E-50A Weld 1-104-251-IRS	Acceptable	UT	
B-G-1					
	RPV				
		RPV-Ligaments	Acceptable	UT	
	RVH				
		RPVCH S/N 37 Nut	Acceptable	MT	
		RPVCH S/N 37 Stud	Acceptable	UT/MT	
		RPVCH S/N 37 Washer	Acceptable	VT-1	
		RPVCH S/N 38 Nut	Acceptable	MT	
		RPVCH S/N 38 Stud	Acceptable	UT/MT	
		RPVCH S/N 38 Washer	Acceptable	VT-1	
		RPVCH S/N 39 Nut	Acceptable	MT	
		RPVCH S/N 39 Stud	Acceptable	UT/MT	
		RPVCH S/N 39 Washer	Acceptable	VT-1	
		RPVCH S/N 40 Nut	Acceptable	MT	
		RPVCH S/N 40 Stud	Acceptable	UT/MT	
		RPVCH S/N 40 Washer	Acceptable	VT-1	
		RPVCH S/N 41 Nut	Acceptable	MT	
		RPVCH S/N 41 Stud	Acceptable	UT/MT	
		RPVCH S/N 41 Washer	Acceptable	VT-1	

Category	System	Component ID	Disposition	Exam	Comments
		RPVCH S/N 42 Nut	Acceptable	MT	
		RPVCH S/N 42 Stud	Acceptable	UT/MT	
		RPVCH S/N 42 Washer	Acceptable	VT-1	
		RPVCH S/N 43 Nut	Acceptable	MT	
		RPVCH S/N 43 Stud	Acceptable	UT/MT	
		RPVCH S/N 43 Washer	Acceptable	VT-1	
		RPVCH S/N 44 Nut	Acceptable	MT	
		RPVCH S/N 44 Stud	Acceptable	UT/MT	
		RPVCH S/N 44 Washer	Acceptable	VT-1	
		RPVCH S/N 45 Nut	Acceptable	MT	
		RPVCH S/N 45 Stud	Acceptable	UT/MT	
		RPVCH S/N 45 Washer	Acceptable	VT-1	
		RPVCH S/N 46 Nut	Acceptable	MT	
		RPVCH S/N 46 Stud	Acceptable	UT/MT	
		RPVCH S/N 46 Washer	Acceptable	VT-1	
		RPVCH S/N 47 Nut	Acceptable	MT	
		RPVCH S/N 47 Stud	Acceptable	UT/MT	
		RPVCH S/N 47 Washer	Acceptable	VT-1	
		RPVCH S/N 48 Nut	Acceptable	MT	
		RPVCH S/N 48 Stud	Acceptable	UT/MT	

Category	System	Component ID	Disposition	Exam	Comments
		RPVCH S/N 48 Washer	Acceptable	VT-1	
		RPVCH S/N 49 Nut	Acceptable	MT	
		RPVCH S/N 49 Stud	Acceptable	UT/MT	
		RPVCH S/N 49 Washer	Acceptable	VT-1	
		RPVCH S/N 50 Nut	Acceptable	MT	
		RPVCH S/N 50 Stud	Acceptable	UT/MT	
		RPVCH S/N 50 Washer	Acceptable	VT-1	
		RPVCH S/N 51 Nut	Acceptable	MT	
		RPVCH S/N 51 Stud	Acceptable	UT/MT	
		RPVCH S/N 51 Washer	Acceptable	VT-1	
		RPVCH S/N 52 Nut	Acceptable	MT	
		RPVCH S/N 52 Stud	Acceptable	UT/MT	
		RPVCH S/N 52 Washer	Acceptable	VT-1	
		RPVCH S/N 53 Nut	Acceptable	MT	
		RPVCH S/N 53 Stud	Acceptable	UT/MT	
		RPVCH S/N 53 Washer	Acceptable	VT-1	
		RPVCH S/N 54 Nut	Acceptable	MT	
		RPVCH S/N 54 Stud	Acceptable	UT/MT	
		RPVCH S/N 54 Washer	Acceptable	VT-1	

Category	System	Component ID	Disposition	Exam	Comments
	ESS				
		CK3118-BT	Acceptable	VT-1	
	P1A				
		Primary Coolant Pump P-50A 1A-2BT-B-1-16	Acceptable	VT-1	
		Primary Coolant Pump P-50A 1A-2BT-W-1-16	Acceptable	VT-1	
	P1B				
		1B-2BT-B-1-16	Acceptable	VT-1	
		1B-2BT-W-1-16	Acceptable	VT-1	
	PCS				
		MO3016-BT	Acceptable	VT-1	
		PCS-4-PRS-1P2-3BT	Acceptable	VT-1	
		PCS-4-PRS-1P3-8BT	Acceptable	VT-1	
	SG1				
		SG No.2 E-50B Primary Manway #1 Studs	Acceptable	VT-1	
		SG No.2 E-50B Primary Manway #2 Studs	Acceptable	VT-1	
	SG2				
		SG No.1 E-50A Primary Manway # 1	Acceptable	VT-1	
		SG No.1 E-50A Primary Manway # 2	Acceptable	VT-1	
B-N-1					
	RPV				
		RPV-Vessel Interior	Acceptable	VT-3	
C-A					
	SG1				
		1-101-241	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		1-102-221	Acceptable	UT	
		1-201-246	Acceptable	UT	
C-B					
	SG1				
		1-104-221	Acceptable	UT	
		1-105-201-IRS	Acceptable	MT	
		1-1510-271	Acceptable	PT	
C-C					
	ESS				
		ESS-12-SIS-1A1-3PL1-4(H739)	Acceptable	PT	
		ESS-12-SIS-1B1-7PL1-4(H728)	Acceptable	PT	
		ESS-6-LTC-1A-203PL1-4(H726)	Acceptable	PT	
		ESS-6-LTC-1A-218PL1-4(H722)	Acceptable	PT	
	FWS				
		FWS-18-FWL-2S1-257PL1-4(H32A)	Acceptable	PT	
	MSS				
		MSS-36-MSL-1S1-210PL	Acceptable	MT	
		MSS-36-MSL-2S1-212PL	Acceptable	MT	
	SG1				
		1-A	Acceptable	MT	
		1-B	Acceptable	MT	
		1-C	Acceptable	MT	
		1-D	Acceptable	MT	

Category	System	Component ID	Disposition	Exam	Comments
		1-E	Acceptable	MT	
		1-F	Acceptable	MT	
D-B					
	CCS				
		CCS-10-RWS-1P1-PR1-DB(H8)	Acceptable	VT-3	
		CCS-16-CPU-1PA-PS(H323)	Acceptable	VT-3	
		CCS-20-CPU-1PA-PS(H303.2)	Acceptable	VT-3	
	FWS				
		FWS-6-AWS-SLC-PS	Acceptable	VT-3	
	SWS				
		SWS-10-CRS-RL1-PS(H302)	Acceptable	VT-3	
		SWS-10-CRS-RL1-PS1	Acceptable	VT-3	
		SWS-10-CRS-RL3-PS5	Acceptable	VT-3	
		SWS-10-CRS-RL4-PR1-DB	Acceptable	VT-3	
		SWS-10-CRS-SL3-PS4	Acceptable	VT-3	
		SWS-10-CRS-SL3-PS5	Acceptable	VT-3	
		SWS-16-CRS-SH1-PR-DB	Acceptable	VT-3	
		SWS-16-SWP-OLA-PS(H9)	Acceptable	VT-3	
		SWS-24-CSW-SH1-PSA1	Acceptable	VT-3	
		SWS-6-CRS-2S1-PS(H297)	Acceptable	VT-3	
		SWS-6-CRS-2S2-PS1(H28)	Acceptable	VT-3	

Category	System	Component ID	Disposition	Exam	Comments
		SWS-6-CRS-3S1-PS1(H27)	Acceptable	VT-3	
		SWS-6-CRS-4R2-PS3(H18)	Acceptable	VT-3	
		SWS-6-CRS-4S1-PS1(H11)	Acceptable	VT-3	
		SWS-6-CRS-4S2-PS1(H10)	Acceptable	VT-3	
		SWS-6-EPS-SLB-PR3B-DB(H67.1)	Acceptable	VT-3	
		SWS-8-CRS-RL2-PS2(H39)	Acceptable	VT-3	
F-A					
	CCS				
		CCS-10-RWS-1P1-PR1(H8)	Acceptable	VT-3	
		CCS-16-CPU-1PA-PSS(H323)	Acceptable	VT-3	
		CCS-20-CPU-1PA-PSS(H303.2)	Acceptable	VT-3	
	CSA				
		P-54A-02	Acceptable	VT-3	
	ESS				
		ESS-10-SDC-XIA-202PR(H120.1)	Acceptable	VT-3	
		ESS-12-SIS-1B1-7PR(H728)	Acceptable	VT-3	
		ESS-12-SIS-1LP-219PR(R143.1)	Acceptable	VT-3	
		ESS-14-SIS-HPA-207PR1	Acceptable	VT-3	
		ESS-14-SIS-HPA-207PR2	Acceptable	VT-3	
		ESS-24-SIS-SH1-203PR(H169.1)	Acceptable	VT-3	
		ESS-24-SIS-SH1-209PR1(H169)	Acceptable	VT-3	

Category	System	Component ID	Disposition	Exam	Comments
		ESS-6-SIS-2B1-16PR(R-770.1)	Acceptable	VT-3	
		ESS-6-SIS-2B1-20PR(H-767)	Acceptable	VT-3	
		ESS-8-SIS-HPB-207PR(H179)	Acceptable	VT-3	
	FWS				
		FWS-18-FWL-1S1-256APR(R32.1)	Acceptable	VT-3	
		FWS-6-AWS-OLC-PR2 (H4)	Acceptable	VT-3	
		FWS-6-AWS-SLC-PSS (H4)	Acceptable	VT-3	
	HSB				
		P-66B-02	Acceptable	VT-3	
	LSB				
		P-67B-02	Acceptable	VT-3	
	PCS				
		PCS-4-PSS-1P1-5PR(H-22A)	Acceptable	VT-3	
	PZR				
		Pressurizer T-72 Weld 4-984/5-984-SS	Acceptable	VT-3	
	RGA				
		Regen Heat Exchanger Weld E-56A-S-01	Acceptable	VT-3	
	SG1				
		1-A-SS	Acceptable	VT-3	
		1-B-SS	Acceptable	VT-3	
		1-C-SS	Acceptable	VT-3	
		1-D-SS	Acceptable	VT-3	
		1-E-SS	Acceptable	VT-3	

Category	System	Component ID	Disposition	Exam	Comments
		1-F-SS	Acceptable	VT-3	
		SG No.1 E-50A 1-SK-SS	Acceptable	VT-3	
	SIS				
		ESS-6-SIS-2HP-216PRA(R203.1)	Acceptable	VT-3	
	SWS				
		SWS-10-CRS-RL1-PSS(H302)	Acceptable	VT-3	
		SWS-10-CRS-RL1-PSS1(H48)	Acceptable	VT-3	
		SWS-10-CRS-RL3-PSS5(H264)	Acceptable	VT-3	
		SWS-10-CRS-RL4-PR1(H275)	Acceptable	VT-3	
		SWS-10-CRS-SL3-PSS4(H254)	Acceptable	VT-3	
		SWS-10-CRS-SL3-PSS5(H256)	Acceptable	VT-3	
		SWS-16-CRS-SH1-PR(H284)	Acceptable	VT-3	
		SWS-16-SWP-OLA-PSS(H9)	Acceptable	VT-3	
		SWS-24-CSW-SH1-PSSA1(H281.1)	Acceptable	VT-3	
		SWS-6-CRS-2S1-PSS(H297)	Acceptable	VT-3	
		SWS-6-CRS-2S2-PSS1(H28)	Acceptable	VT-3	
		SWS-6-CRS-3S1-PSS1(H27)	Acceptable	VT-3	
		SWS-6-CRS-4R2-PSS3(H18)	Acceptable	VT-3	
		SWS-6-CRS-4S1-PSS1(H11)	Acceptable	VT-3	
		SWS-6-CRS-4S2-PSS1(H10)	Acceptable	VT-3	
		SWS-6-EPS-SLB-PR3B(H67.1)	Acceptable	VT-3	

Category	System	Component ID	Disposition	Exam	Comments
		SWS-8-CRS-RL2-PSS2(H39)	Acceptable	VT-3	
	VAS				
		VAS-8-CPU-RL1-205PR(H1)	Acceptable	VT-3	
R-A					
	AFW				
		Segment AFW-010	Acceptable	VT-2	
		Segment AFW-011	Acceptable	VT-2	
		Segment AFW-012	Acceptable	VT-2	
		Segment AFW-016	Acceptable	VT-2	
		Segment AFW-018	Acceptable	VT-2	
	BLD				
		Segment BLD-003	Acceptable	VT-2	
		Segment BLD-004	Acceptable	VT-2	
		Segment BLD-005A	Acceptable	VT-2	
		Segment BLD-006A	Acceptable	VT-2	
	CBA				
		Segment CBA-012	Acceptable	VT-2	
	CDS				
		CDS-014 Weld 12	Acceptable	UT	
	CSW				
		CSW-006B Weld 4	Acceptable	UT	
		CSW-007 Weld 7	Acceptable	UT	
		CSW-008 Weld 5	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		CSW-009 Weld 1	Acceptable	UT	
		CSW-016 Weld 2	Acceptable	UT	
		CSW-017 Weld 2	Acceptable	UT	
	CWS				
		Segment CWS-011	Acceptable	VT-2	
		Segment CWS-012	Acceptable	VT-2	
	FWS				
		AFW-010 Weld 4	Acceptable	UT	
		AFW-012 Weld 9	Acceptable	UT	
	HED				
		HED-001 Weld 5	Acceptable	UT	
		HED-002 Weld 3	Acceptable	UT	
		HED-005 Weld 20	Acceptable	UT	
	LPI				
		LPI-002 Weld 12	Acceptable	UT	
		LPI-002 Weld 13	Acceptable	UT	
		LPI-002A Weld 19	Acceptable	UT	
		LPI-002A Weld 21	Acceptable	UT	
		LPI-004 Weld 12	Acceptable	UT	
		LPI-004 Weld 13	Acceptable	UT	
		LPI-004A Weld 26	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		LPI-004A Weld 27	Acceptable	UT	
		Segment LPI-001A	Acceptable	VT-2	
		Segment LPI-002A	Acceptable	VT-2	
		Segment LPI-003A	Acceptable	VT-2	
		Segment LPI-004A	Acceptable	VT-2	
	MSS				
		MSS-027 Weld 3	Acceptable	UT	
		MSS-041 Weld 2	Acceptable	UT	
		MSS-047 Weld 25	Acceptable	UT	
		MSS-048 Weld 5	Acceptable	UT	
		MSS-049 Weld 8	Acceptable	UT	
		MSS-059 Weld 41	Acceptable	UT	
		MSS-060 Weld 36	Acceptable	UT	
		MSS-067 Weld 2	Acceptable	UT	
		MSS-069 Weld 2	Acceptable	UT	
		MSS-071 Weld 5	Acceptable	UT	
		MSS-076 Weld 3	Acceptable	UT	
		Segment MSS-048	Acceptable	VT-2	
		Segment MSS-049	Acceptable	VT-2	
	NSW				
		NSW-001 Weld 38	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		NSW-004 Weld 6	Acceptable	UT	
		NSW-005 Weld 45	Acceptable	UT	
		NSW-010A Weld 23	Acceptable by Analysis	RT	See Section 3 EC-7950
		NSW-010C Weld 6	Acceptable	UT	
		Segment NSW-005	Acceptable	VT-2	
	PCS				
		PCS-036 Weld 14	Acceptable	UT	
		PCS-036 Weld 15	Acceptable	UT	
		Segment PCS-011	Acceptable	VT-2	
		Segment PCS-012	Acceptable	VT-2	
		Segment PCS-013	Acceptable	VT-2	
		Segment PCS-014	Acceptable	VT-2	
		Segment PCS-015	Acceptable	VT-2	
		Segment PCS-016	Acceptable	VT-2	
		Segment PCS-017	Acceptable	VT-2	
		Segment PCS-018	Acceptable	VT-2	
		Segment PCS-019A	Acceptable	VT-2	
		Segment PCS-019B	Acceptable	VT-2	
		Segment PCS-020A	Acceptable	VT-2	
		Segment PCS-020B	Acceptable	VT-2	

Category	System	Component ID	Disposition	Exam	Comments
		Segment PCS-021A	Acceptable	VT-2	
		Segment PCS-021B	Acceptable	VT-2	
		Segment PCS-022A	Acceptable	VT-2	
		Segment PCS-022B	Acceptable	VT-2	
		Segment PCS-023	Acceptable	VT-2	
		Segment PCS-026	Acceptable	VT-2	
		Segment PCS-027	Acceptable	VT-2	
		Segment PCS-034A	Acceptable	VT-2	
		Segment PCS-040	Acceptable	VT-2	
		Segment PCS-041	Acceptable	VT-2	
		Segment PCS-042	Acceptable	VT-2	
		Segment PCS-043	Acceptable	VT-2	
	PZR				
		PZR-001 Weld 1	Acceptable	UT	
		PZR-001 Weld 2	Acceptable	UT	
		PZR-001 Weld 7	Acceptable	UT	
		PZR-001 Weld 8	Acceptable	UT	
		PZR-016 Weld 14	Acceptable	UT	
		PZR-017 Weld 22	Acceptable	UT	
		Segment PZR-002	Acceptable	VT-2	

Category	System	Component ID	Disposition	Exam	Comments
		Segment PZR-003	Acceptable	VT-2	
		Segment PZR-004	Acceptable	VT-2	
		Segment PZR-005	Acceptable	VT-2	
		Segment PZR-006	Acceptable	VT-2	
		Segment PZR-007	Acceptable	VT-2	
		Segment PZR-008	Acceptable	VT-2	
		Segment PZR-009	Acceptable	VT-2	
		Segment PZR-010	Acceptable	VT-2	
		Segment PZR-014A	Acceptable	VT-2	
		Segment PZR-015	Acceptable	VT-2	
		Segment PZR-018	Acceptable	VT-2	
		Segment PZR-019	Acceptable	VT-2	
		Segment PZR-020	Acceptable	VT-2	
	SDC				
		SDC-002B1 Weld 26	Acceptable	UT	
		SDC-002B1 Weld 26LDI	Acceptable	UT	
		SDC-002B1 Weld 26LDO	Acceptable	UT	
		SDC-002B1 Weld 26LU	Acceptable	UT	
		SDC-002B2 Weld 9	Acceptable	UT	
		SDC-002B2 Weld 9LD	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		SDC-002B2 Weld 9LUI	Acceptable	UT	
		SDC-002B2 Weld 9LUO	Acceptable	UT	
		SDC-005 Weld 3	Acceptable	UT	
		SDC-005 Weld 3LDI	Acceptable	UT	
		SDC-005 Weld 3LDO	Acceptable	UT	
		SDC-005 Weld 3LU	Acceptable	UT	
		SDC-011A1 Weld 2	Acceptable	UT	
		SDC-011A1 Weld 2LD	Acceptable	UT	
		SDC-011A2 Weld 5	Acceptable	UT	
		SDC-012A1 Weld 2	Acceptable	UT	
		Segment SDC-002B1	Acceptable	VT-2	
		Segment SDC-005	Acceptable	VT-2	
		Segment SDC-006	Acceptable	VT-2	
		Segment SDC-009	Acceptable	VT-2	
		Segment SDC-011A2	Acceptable	VT-2	
		Segment SDC-012A2	Acceptable	VT-2	
		Segment SDC-021B	Acceptable	VT-2	
	SSS				
		Segment SSS-001A	Acceptable	VT-2	
		Segment SSS-001B	Acceptable	VT-2	

Category	System	Component ID	Disposition	Exam	Comments
		Segment SSS-002A	Acceptable	VT-2	
		Segment SSS-002B	Acceptable	VT-2	
		Segment SSS-005A	Acceptable	VT-2	
		Segment SSS-006A	Acceptable	VT-2	
		Segment SSS-007	Acceptable	VT-2	
		Segment SSS-008A	Acceptable	VT-2	
		Segment SSS-009	Acceptable	VT-2	
		SSS-007 Weld 2	Acceptable	RT	
		SSS-007 Weld 22	Acceptable	RT	
		SSS-007 Weld 3	Acceptable	RT	
		SSS-007 Weld 32	Acceptable	RT	
		SSS-007 Weld 66	Acceptable	RT	
		SSS-007 Weld 69	Acceptable	RT	

SECTION 2

ASME SECTION XI
REPAIRS AND REPLACEMENTS

ASME Section XI Repairs and Replacements

The following is a list of the repairs or replacements which have been performed through the restart from the 2006 refueling outage for which NIS-2 forms are attached.

	Work Order	Description of Work
1.	19400	Rebuilt Service Water Pump P-7C
2.	26320	Replaced Snubber SNB-38
3.	16739	Replaced Valve MV-SW136
4.	21496	Replaced SIRW Tank Recirc Pump P-74
5.	27257	Replaced Valve CV-0826
6.	27405	Replaced Valve CV-0823
7.	25184	Replaced Valves CV-0821/MV-SW769
8.	25693	Replaced Valves CV-0822/MV-SW770
9.	29819	Repaired VHX-4
10.	26963	Plugged 22 tubes in the "A" Steam Generator
11.	26964	Plugged 10 tubes in the "B" Steam Generator
12.	20457	Replaced Valve CV-3070
13.	270650	Installed Weldolet and Cap on CSW Line
14.	25456	Replaced Steam Generator Studs
15.	269848	Repaired RV-0703
16.	269853	Repaired RV-0705
17.	267581	Repaired RV-0706
18.	269856	Repaired RV-0707
19.	269857	Repaired RV-0715
20.	26379	Repaired RV-0716
21.	269863	Repaired RV-0721
22.	269864	Repaired RV-0722
23.	26226	Repaired RV-1041

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 19400

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO# 19400
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by Nuclear Management Company, LLC — Type Code Symbol Stamp N/A
   Name — Authorization N/A
   27780 Blue Star Hwy, Covert, MI 49043 — Expiration Date N/A
   Address
4. Identification of System SWS — Code Class Class 3
5. (a) Applicable Construction Code B31.1 , 1955 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Discharge Nozzle	Rotating Equip Repair Inc	N/A	N/A	PO#G0271087	2005	Installed	No
Pump Column	Rotating Equip Repair Inc	N/A	N/A	PO#P806660	2005	Installed	No
Pump Bowl	Rotating Equip Repair Inc	N/A	N/A	PO#G0254628	2005	Installed	No

7. Description of Work: Rebuild Service Water Pump P-7C Using Rebuilt Bowl Assembly per EAR-2001-0542
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: N/A

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 9400

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael O. Ash, ASME Program Engineer Date July 21, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K E Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 25, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26320

1. Owner Consumers Energy Company — Name — Date 5/1/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO# 26320 — Repair Organization P.O. No., Job No., etc

3. Work Performed by Owner — Name — Same — Address

Type Code Symbol Stamp N/A
Authorization N/A
Expiration Date N/A
Code Class Class 2

4. Identification of System ESS

5. (a) Applicable Construction Code B31.1 , 1989 Edition Edition

Addenda n/a Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Snubber	Anchor Darling	ADH-1000-2487	n/a	PO#GO284322	1999	Installed	No

7. Description of Work Replaced Snubber SNB-38 per Snubber Program

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☐ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 25320

9. Remarks

n/a

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 16739

1. Owner Consumers Energy Company — Name — Date 6/26/2006
2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 — Address — WO# 16739 — Repair Organization P.O. No., Job No., etc
3. Work Performed by Owner — Name — Type Code Symbol Stamp N/A
   Same — Address — Authorization N/A — Expiration Date N/A
4. Identification of System SWS — Code Class Class 3
5. (a) Applicable Construction Code ASME B31.1 , 1955 Edition — Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
MV-SW136	Crane Nuclear	Model 143 1/2 XU	n/a	PO#G0309185	2006	Installed	No
Flanges 4" 300#	Energy Steel Supply	n/a	n/a	PO#P807305	2006	Installed	No
Studs 5/8" -11 UNC X4" Long	Muskon Inc	n/a	n/a	PO#P805467	2006	Installed	No
Hex Nuts 5/8"-11	Muskon Inc	n/a	n/a	PO#P805467	2006	Installed	No

7. Description of Work Replace Valve MV-SW136
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date July 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K S Blake — Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 26, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 21496

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#21496 — Repair Organization P.O. No., Job No., etc

3. Work Performed by Owner — Name — Type Code Symbol Stamp N/A

Same — Address — Authorization N/A

Expiration Date N/A

4. Identification of System — Code Class Class 2

5. (a) Applicable Construction Code ASME B31.1 , 1955 Edition

Addenda n/a Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
P-74 SIRW Recirc Pump	Chesterton	3247GS	n/a	PO#G0195946-CQ	1996	Installed	No
4"x1 1/2" Conc Reducer	Energy & Process Corp	n/a	n/a	PO# P00002253	2006	Installed	No
4" Flange	Energy & Process Corp	n/a	n/a	PO# P00002253	2006	Installed	No

7. Description of Work: Replaced SIRW Tank Recirculation Pump P-74 per EAR-2003-0270

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: N/A

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 21496

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date July 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 27, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO#27257
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by Enertech — Type Code Symbol Stamp N/A
   Name — Authorization N/A
   2950 Birtch Street,Brea,CA 92821 — Expiration Date N/A
   Address
4. Identification of System CCW — Code Class Class 3
5. (a) Applicable Construction Code ANSI B16.4 , 1981 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-0826 CCW Heat Exchanger Control Valve	Enertech	S/N 10315	n/a	PO#2276	2006	Corrected	N

7. Description of Work: Installed hard stop and repaired areas of Erosion/Cavitation on ID of Valve Body
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure NOP psi Test Temp. NOT °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date July 21, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 25, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 27405

1. Owner Consumers Energy Company — Name — Date 6/26/2006
2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 — Address — WO#27405 — Repair Organization P.O. No., Job No., etc
3. Work Performed by Owner — Name — Type Code Symbol Stamp N/A
   Same — Address — Authorization N/A
   Expiration Date N/A
4. Identification of System CCW — Code Class Class 3
5. (a) Applicable Construction Code ANSI B16.4 , 1981 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-0823 CCW Heat Exchanger Control Valve	Enertech	S/N 11524	n/a	PO#P808270	2006	Installed	No

7. Description of Work: Installed hard stop and repaired areas of Erosion/Cavitation on ID of Valve Body
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 27495

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed _____, ASME Program Engineer Date July 24, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

_____ Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 25, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO# 25184 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: Nuclear Management Company, LLC (Name) — Type Code Symbol Stamp: N/A; Authorization: N/A; Expiration Date: N/A
   27780 Blue Star Hwy, Covert, MI 49043 (Address)
4. Identification of System: SWS — Code Class: Class 3
5. (a) Applicable Construction Code: ASME B31.1, 1973 Edition, Edition
   Addenda: 1974 Addend — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: n/a
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-0821	Fisher	S/N17545158	n/a	PO#P806452	2006	Installed	No
MV-SW769	Velan	S/N6615405-02	n/a	OP#P806519	2006	Installed	No

7. Description of Work: Replaced Valve CV-0821 and Installed new Isolation Valve MV-SW769
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

n/a

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ach, ASME Program Engineer Date July 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K L Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 26, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 25693

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO# 25693 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: Nuclear Management Company, LLC (Name) — Type Code Symbol Stamp: N/A
   27780 Blue Star Hwy, Covert, MI 49043 (Address) — Authorization: N/A — Expiration Date: N/A
4. Identification of System: SWS — Code Class: Class 3
5. (a) Applicable Construction Code: ASME B31.1, 1973 Edition Edition — Addenda: 1974 Addend — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: n/a
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-0822	Fisher	S/N17545159	n/a	PO#P806452	2006	Installed	No
MV-SW770	Velan	Model F12-11X13-BC2A	n/a	PO#P806519	2006	Installed	No

7. Description of Work: Replaced Valve CV-0822 and Installed new Isolation Valve MV-SW770
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

n/a

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date July 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 26, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 29819

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#29819 — Repair Organization P.O. No., Job No., etc

3. Work Performed by Owner — Name — Same — Address

Type Code Symbol Stamp N/A

Authorization N/A

Expiration Date N/A

4. Identification of System VAS — Code Class Class 3

5. (a) Applicable Construction Code ASME B31.1 , 1955 Edition

Addenda n/a Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Tube Plugs	Heat Exchanger Prod Corp	n/a	n/a	PO#663	2005	Installed	No

7. Description of Work Plugged tube in VHX-4 Heat Exacanger

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 29819

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Colton, ASME Program Engineer Date June 27, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K B Clarke Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 05, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26963

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO#26963 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: Owner (Name)
   Same (Address)
   Type Code Symbol Stamp: N/A
   Authorization: N/A
   Expiration Date: N/A
4. Identification of System: PCS — Code Class: Class 1
5. (a) Applicable Construction Code: ASME Section III , 1977 Edition
   Addenda: n/a — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Tube Plugs	Westinghouse Electric Company	n/a	n/a	PO#1281	2005	Installed	No

7. Description of Work: Plugged 22 tubes in the "A" Steam Generator
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other:

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 06, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26964

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO#26964 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: Owner (Name)
   Same (Address)
   Type Code Symbol Stamp: N/A
   Authorization: N/A
   Expiration Date: N/A
4. Identification of System: PCS — Code Class: Class 1
5. (a) Applicable Construction Code: ASME Section III , 1977 Edition
   Addenda: n/a — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Tube Plugs	Westinghouse Electric Company	n/a	n/a	PO#1281	2005	Installed	No

7. Description of Work: Plugged 10 tubes in the "B" Steam Generator
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26964

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ash, ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K E Blake — Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 06, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 20457

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#20457 — Repair Organization P.O. No., Job No., etc

3. Work Performed by Owner — Name — Type Code Symbol Stamp N/A

Same — Address — Authorization N/A

Expiration Date N/A

4. Identification of System ESS — Code Class Class 2

5. (a) Applicable Construction Code ASME B31.1 , 1955 Edition Edition

Addenda n/a — Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases N-416-1

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-3070	Aloyco Inc	68-M113-1	n/a	PO#4838	2006	Installed	No

7. Description of Work Replaced HPSI Pump P-66B subcooling valve CV-3070

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 20457-

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ash, ASME Program Engineer Date June 27, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K E Blake — Inspector's Signature

Commissions MI 300762 — National Board, Province and Endorsements

Date July 27, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 270650

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO#270650 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: Owner (Name)
   Same (Address)
   Type Code Symbol Stamp: N/A
   Authorization: N/A
   Expiration Date: N/A
4. Identification of System: CSW — Code Class: Class 3
5. (a) Applicable Construction Code: ASME B31.1, 1955 Edition, Edition
   Addenda: n/a — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: N-416-1
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
3" Weldolet	Dubose	n/a	n/a	PO#5457	2006	Installed	No
3" Pipe Cap	Dubose	n/a	n/a	PO#5457	2006	Installed	No

7. Description of Work: Installed weldolet and cap on servive water pipe
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 270650

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael O. Ash, ASME Program Engineer Date June 27, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K.B. Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 26, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 25456

1. Owner Consumers Energy Company — Name — Date 6/26/2006
2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 — Address — WO#25456 — Repair Organization P.O. No., Job No., etc
3. Work Performed by Owner — Name — Type Code Symbol Stamp N/A
   Same — Address — Authorization N/A
   Expiration Date N/A
4. Identification of System PCS — Code Class Class 1
5. (a) Applicable Construction Code ASME Serction III , 1989 Edition Edition
   Addenda n/a Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
Studs	Westinghouse	n/a	n/a	PO# G0201602	n/a	Installed	No
Nuts	Westinghouse	n/a	n/a	PO# G78219	n/a	Installed	No
Helicoil	Westinghouse	n/a	n/a	PO# G0318552	n/a	Installed	No

7. Description of Work: Replace stuck stud & studs #10 OB and Stud #14 IB
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure NOP psi Test Temp. NOT °F

Other: n/a

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 25456

9. Remarks

None

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ach, ASME Program Engineer Date June 27, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K G Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 06, 2006

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269848

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO#269848
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by NWS Technologies,LLC — Type Code Symbol Stamp VR / NR
   Name — Authorization 632 / 81
   131 Venture Blvd, Spartanburg,SC 29301 — Expiration Date 4/3/2009 4/9/2009
   Address
4. Identification of System MSS — Code Class
5. (a) Applicable Construction Code ASME Section III , 1968 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0703	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0703

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☐
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
b: Name of manufacturer: Anderson Greenwood / Crosby
c: Identifying nos.

HA 55	RV-0703	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. Opening pressure: 1025 psig
Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): As-found steam test. Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, replaced spindle, lapped seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.

12. Remarks: NWS Traveler #: 06-127. Replaced spindle.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar V. Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269853

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO#269853
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by NWS Technologies,LLC — Type Code Symbol Stamp VR / NR
   Name — Authorization 632 / 81
   131 Venture Blvd, Spartanburg,SC 29301 — Expiration Date 4/3/2009 4/9/2009
   Address
4. Identification of System MSS — Code Class
5. (a) Applicable Construction Code ASME Section III , 1968 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0705	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0705

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☒
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
   131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
   b: Name of manufacturer: Anderson Greenwood / Crosby
   c: Identifying nos.

HA 55	RV-0705	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

   d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. ~~Opening pressure: 1025 psig~~
    Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): As-found steam test. Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, replaced spindle, lapped seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.

12. Remarks: NWS Traveler #: 06-128. Replaced spindle.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar V. Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspectors Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 267581

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#267581 — Repair Organization P.O. No., Job No., etc

3. Work Performed by NWS Technologies,LLC — Name — Type Code Symbol Stamp VR / NR

131 Venture Blvd, Spartanburg,SC 29301 — Address — Authorization 632 / 81

Expiration Date 4/3/2009 4/9/2009

4. Identification of System MSS — Code Class

5. (a) Applicable Construction Code ASME Section III , 1968 Edition

Addenda n/a — Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0706	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0706

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☐
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
   131 Venture Boulevard, Spartanburg, SC 29306
2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant
3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043
5. a: Repaired pressure relief device: Main Steam Safety Valve
   b: Name of manufacturer: Anderson Greenwood / Crosby
   c: Identifying nos.

HA 55	RV-0706	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

   d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a
10. Opening pressure: 1025 psig
    Set-pressure adjustment made at: NWS Technologies, LLC using steam
11. Description of work (Include name and identifying number of replacement parts): As-found steam test. Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, lapped seats. Certified set-pressure and seat tightness using steam.
12. Remarks: NWS Traveler #: 06-129.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar V. Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269856

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#269856 — Repair Organization P.O. No., Job No., etc

3. Work Performed by NWS Technologies,LLC — Name — Type Code Symbol Stamp VR / NR

131 Venture Blvd, Spartanburg,SC 29301 — Address — Authorization 632 / 81

Expiration Date 4/3/2009 4/9/2009

4. Identification of System MSS — Code Class

5. (a) Applicable Construction Code ASME Section III , 1968 Edition

Addenda n/a — Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0707	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0707

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☐
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
   131 Venture Boulevard, Spartanburg, SC 29306
2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant
3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043
5. a: Repaired pressure relief device: Main Steam Safety Valve
   b: Name of manufacturer: Anderson Greenwood / Crosby
   c: Identifying nos.

HA 55	RV-0707	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

   d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a
10. Opening pressure: 1025 psig
    Set-pressure adjustment made at: NWS Technologies, LLC using steam
11. Description of work (include name and identifying number of replacement parts): Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, lapped seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.
12. Remarks: NWS Traveler #: 06-130.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar V. Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269857

1. Owner: Consumers Energy Company (Name) — Date: 6/26/2006
2. Plant: Palisades Nuclear Power Plant (Name) — Sheet: 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 (Address) — WO#269857 (Repair Organization P.O. No., Job No., etc)
3. Work Performed by: NWS Technologies,LLC (Name) — Type Code Symbol Stamp: VR / NR
   131 Venture Blvd, Spartanburg,SC 29301 (Address) — Authorization: 632 / 81
   Expiration Date: 4/3/2009 4/9/2009
4. Identification of System: MSS — Code Class:
5. (a) Applicable Construction Code: ASME Section III , 1968 Edition
   Addenda: n/a — Code Case: n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity: 1989 With No Addenda
   (c) Applicable Section XI Code Cases: None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0715	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work: Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other:

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0715

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ach, ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K S Blake Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☑ REPLACEMENT ☐
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
b: Name of manufacturer: Anderson Greenwood / Crosby
c: Identifying nos.

HA 55	RV-0715	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. Opening pressure: 1005 psig
Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): As-found steam test. Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, lapped seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.

12. Remarks: NWS Traveler #: 06-131.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F Toegel Jr	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26379

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO#26379
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by NWS Technologies,LLC — Type Code Symbol Stamp VR / NR
   Name — Authorization 632 / 81
   131 Venture Blvd, Spartanburg,SC 29301 — Expiration Date 4/3/2009 4/9/2009
   Address
4. Identification of System MSS — Code Class
5. (a) Applicable Construction Code ASME Section III , 1968 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0716	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other:

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0716

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☒
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
   131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
   b: Name of manufacturer: Anderson Greenwood / Crosby
   c: Identifying nos.

HA 55	RV-0716	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

   d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. Opening pressure: 1005 psig
    Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, replaced disc, lapped seats. Certified set-pressure and seat tightness steam.

12. Remarks: NWS Traveler #: 06-132. Replaced disc.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacemtn of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/20/06	NWS Technologies, LLC	Cesar V. Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Carl R. Enos holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of Tennessee and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/20/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Futhermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/20/06	Carl R. Enos	NB # 8460, A, N, I TN# 2236
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269863

1. Owner Consumers Energy Company — Name — Date 6/26/2006
2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2
   27780 Blue Star Highway, Covert, MI 49043 — Address — WO#269863 — Repair Organization P.O. No., Job No., etc
3. Work Performed by NWS Technologies,LLC — Name — Type Code Symbol Stamp VR / NR
   131 Venture Blvd, Spartanburg,SC 29301 — Address — Authorization 632 / 81
   Expiration Date 4/3/2009 4/9/2009
4. Identification of System MSS — Code Class Class 2
5. (a) Applicable Construction Code ASME Section III , 1968 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0721	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0721

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael W. Ach, ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K B Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☐ REPLACEMENT ☒
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00004610
131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisa
Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
b: Name of manufacturer: Anderson Greenwood / Crosby
c: Identifying nos.

HA 55	RV-0721	n/a	steam	6Q8	n/
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.b

d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Clas

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(

9. Design responsibilities: n/a

10. Opening pressure: 985 psig
Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): As-found steam test. Disassembled inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, replaced spindle, lapped seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.

12. Remarks: NWS Traveler #: 06-133. Replaced spindle.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	[signature]	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modifica or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belie this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied concerning this repair, modification or replacement described in this report. Furthermore, neither the undersign nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	[signature]	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 269864

1. Owner Consumers Energy Company — Date 6/26/2006
   Name
2. Plant Palisades Nuclear Power Plant — Sheet 1 of 2
   Name
   27780 Blue Star Highway, Covert, MI 49043 — WO#269864
   Address — Repair Organization P.O. No., Job No., etc
3. Work Performed by NWS Technologies,LLC — Type Code Symbol Stamp VR / NR
   Name — Authorization 632 / 81
   131 Venture Blvd, Spartanburg,SC 29301 — Expiration Date 4/3/2009 4/9/2009
   Address
4. Identification of System MSS — Code Class
5. (a) Applicable Construction Code ASME Section III , 1968 Edition
   Addenda n/a — Code Case n/a
   (b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda
   (c) Applicable Section XI Code Cases None
6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-0722	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Relief Valve
8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐
   Other ☐ Pressure _____ psi Test Temp. _____ °F

Other:

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-0722

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed Michael C. Cash, ASME Program Engineer Date June 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

K.B. Blake Commissions MI 300762

Inspector's Signature National Board, Province and Endorsements

Date July 05, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☐
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: NWS Technologies, LLC Purchase Order # 00004610
   131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Nuclear Management Company - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Nuclear Management Company - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Main Steam Safety Valve
   b: Name of manufacturer: Anderson Greenwood / Crosby
   c: Identifying nos.

HA 55	RV-0722	n/a	steam	6Q8	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

   d: Construction Code:

ASME Sec. III	1968	n/a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1968	n/a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. Opening pressure: 985 psig
    Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (include name and identifying number of replacement parts): As-found steam test. Disassembled, inspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, lapped seats. Certified set-pressure and seat tightness using steam.

12. Remarks: NWS Traveler #: 06-134.

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.

National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.

By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM 26226

1. Owner Consumers Energy Company — Name — Date 6/26/2006

2. Plant Palisades Nuclear Power Plant — Name — Sheet 1 of 2

27780 Blue Star Highway, Covert, MI 49043 — Address — WO#26226 — Repair Organization P.O. No., Job No., etc

3. Work Performed by NWS Technologies,LLC — Name

131 Venture Blvd, Spartanburg,SC 29301 — Address

Type Code Symbol Stamp VR / NR

Authorization 632 / 81

Expiration Date 4/3/2009 4/9/2009

4. Identification of System PCS — Code Class Class 1

5. (a) Applicable Construction Code ASME Section III , 1965 Edition

Addenda Winter 1965 Code Case n/a

(b) Applicable Edition of Section XI Utilized for Repair/Replacement Activity 1989 With No Addenda

(c) Applicable Section XI Code Cases None

6. Identification of Components

Name of Component	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
RV-1041	See Attached Form NVR-1	-	-	-	-	-	-

7. Description of Work Repaired Pressurizer Relief Valve

8. Tests conducted: Hydrostatic ☐ Pneumatic ☐ Nominal Operating Pressure ☑ Exempt ☐

Other ☐ Pressure _____ psi Test Temp. _____ °F

Other: _____

NOTE: Supplemental sheets in form of lists, sketches, or drawings may be used, provided (1) size is 8 1 /2 in. x 11 in., (2) information in items 1 through 6 on this report is included on each sheet, and (3) each sheet is numbered and number of sheets is recorded at the top of this form.

PALISADES NUCLEAR POWER PLANT

FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

ITEM [redacted]

9. Remarks

See Attached Form NVR-1 for RV-1041

CERTIFICATE OF COMPLIANCE

We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code, Section XI.

Type Code Symbol Stamp N/A

Certificate of Authorization No. N/A Expiration Date N/A

Signed [signature], ASME Program Engineer Date July 26, 2006

CERTIFICATE OF INSERVICE INSPECTION

I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and the State or Province of Michigan and employed by HSB-CT of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to May 10,2006, and state that to the best of my knowledge and belief, the Owner has performed examinations and taken corrective measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.

By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss of any kind arising from or connected with this inspection.

[signature] Commissions MI 300762

Inspector's Signature — National Board, Province and Endorsements

Date July 26, 2006

FORM NVR-1 REPORT OF REPAIR ☒ REPLACEMENT ☒
OF NUCLEAR PRESSURE RELIEF DEVICES

1. Work performed by: **NWS Technologies, LLC** Purchase Order # 00002497
   131 Venture Boulevard, Spartanburg, SC 29306

2. Work performed for: Consumers Energy - Palisades Nuclear Plant

3/4. Owner - name, address and identification of nuclear power plant: Consumers Energy - Palisades Nuclear Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043

5. a: Repaired pressure relief device: Pressurizer Safety Valve
   b: Name of manufacturer: Consolidated - Dresser
   c: Identifying nos.

31739A-1	BL09390	n/a	steam	3"	n/a
(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.built)

d: Construction Code:

ASME Sec. III	1965	W'65a	n/a	1
(name/section/division)	(edition)	(addenda)	(Code Cases(s))	(Code Class)

6. ASME Code Section XI applicable for inservice inspection:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

7. ASME Code Section XI used for repairs, replacements:

1989	n/a	n/a
(edition)	(addenda)	(Code Case(s))

8. Construction Code used for repairs, replacements:

1965	W'65a	n/a
(edition)	(addenda)	(Code Case(s))

9. Design responsibilities: n/a

10. Opening pressure: 2485 psig
    Set-pressure adjustment made at: NWS Technologies, LLC using steam

11. Description of work (Include name and identifying number of replacement parts): As-found test, disassembled, inspected, replaced disc, lapped, assembled, certified set-pressure and seat tightness.

12. Remarks: NWS Traveler # 06-118. Replaced disc and 4 body gaskets

CERTIFICATE OF COMPLIANCE

I, Cesar V. Sierra certify that to the best of my knowledge and belief the statements made in this report are correct and the repair, modification or replacement of the pressure relief devices described above conforms to Section XI of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
National Board Certificate of Authorization No. 632 to use the "VR" stamp expires April 3, 2009.
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.

4/19/06	NWS Technologies, LLC	Cesar Sierra	Manager, QA
Date	Repair Organization	Authorized representative	Title

CERTIFICATE OF INSPECTION

I, Charles F. Toegel Jr. holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boiler of CT of Hartford, CT have inspected the repair, modification or replacement described in this report on 4/19/06 and state that to the best of my knowledge and belief, this repair, modification or replacement has been completed in accordance with Section XI of the of the ASME Code and the National Board Inspection Code "VR" and "NR" rules.
By signing this certificate, neither the undersigned nor my employer makes any warranty, expressed or implied, concerning this repair, modification or replacement described in this report. Furthermore, neither the undersigned nor my employer shall be liable in any manner for any personal injury, property damage or loss of any kind arising from or connected with this inspection.

4/19/2006	Charles F. Toegel Jr.	NB # 8462, A, N, I NC# 1073
Date	Inspector's Signature	Commissions (NB (incl endorsements), jurisdiction,& no.)

SECTION 3

ASME SECTION XI
ANALYSIS OF WELD NSW-010A23

NMC	Calculation Signature Sheet

Document Information

NMC Calculation (Doc) No: EC-7950	Revision: 0
Title: Flaw Evaluation of Palisades CSW Piping Weld NSW-010A23	
Facility: ☐ DA ☐ MT ☐ PB ☐ PI ☒ PL ☐ HU/FT	Unit: ☒ 1 ☐ 2
Safety Class: ☒ SR ☐ Aug Q ☐ Non SR	
Special Codes: ☐ Safeguards ☐ Proprietary	
Calc Type (PassPort DOC-DESC-CODE): DOC (if applicable)	

Major Revisions

EC Number: 7950	☒ Vendor Calc
Vendor Name or Code:SIA	Vendor Doc No: PAL-09Q-301
Description of Revision: Initial issue	
Prepared by: Structural Integrity Associates	Date: 5/01/06
Reviewed by: James Wong	Date: 5/2/06
Type of Review: ☐ Design Verification ☐ Tech Review ☑ Vendor Acceptance	
Method Used (For DV Only): ☐ Review ☐ Alternate Calc ☐ Test	
Approved by: [illegible]	Date: 5/2/06

Minor Revisions

EC No:	☐ Vendor Calc:
Minor Rev. No:	
Description of Change:	
Pages Affected:	
Prepared by:	Date:
Reviewed by:	Date:
Type of Review: ☐ Design Verification ☐ Tech Review ☐ Vendor Acceptance	
Method Used (For DV Only): ☐ Review ☐ Alternate Calc ☐ Test	
Approved by:	Date:

(continued on next page)

Structural Integrity Associates, Inc.	CALCULATION PACKAGE	File No.: PAL-09Q-301 Project No.: PAL-09Q

PROJECT NAME: Flaw Evaluation of Palisades CSW Piping Weld NSW-010A23

Contract No: N/A

CLIENT: Nuclear Management Company	**PLANT:** Palisades

CALCULATION TITLE: ASME Code Section XI Flaw Evaluation of Indications in CSW Piping Weld NSW-010A23

Document Revision	Affected Pages	Revision Description	Project Mgr. Approval Signature & Date	Preparer(s) & Checker(s) Signatures & Date
0	1 - 10 A1 - A15 Computer Files	Original Issue	PH 5/04/06	GAM 5/02/06 NGC 5/02/06
1	1 - 10 A1 - A15 Computer Files	Revised ASME Code Section XI used for the evaluation	PH 5/04/06	GAM 5/02/06 NGC 5/02/06

Table of Contents

List of Figures

1 INTRODUCTION

During routine inservice inspection in the 2006 refueling outage, two rounded indications were identified in Weld NSW-010A23 of the critical service water (CSW) system Line HB-23 at Palisades Nuclear Plant (Palisades). These indications were identified using radiographic examinations. The rounded indications measured 0.140 and 0.125 inches.

The piping is a 3-inch NPS assumed to be fabricated from ASTM A106 Grade B carbon steel. An evaluation performed by NMC personnel indicates that the observed flaws do not meet the ASME Code, Section XI acceptance standards of Table IWB-3514-4. Consequently, per IWA-3300, the indications were combined into a single subsurface flaw and evaluated per the guidelines of ASME B&PV Code, Section XI, IWB-3650, which include acceptance criteria based on the failure mode. A conservative fatigue crack growth evaluation is then performed to determine the adequacy of continued operation of the piping system with the observed indications.

2 TECHNICAL APPROACH

The flaw evaluation consists of the following tasks:

- Perform a flaw evaluation based on the guidelines of ASME B&PV Code, Section XI, IWB-3650 to calculate the allowable flaw size for the CSW pipe weld. Applied stresses due to the moment loading from the piping design analysis are used. Given that the material of the pipe elbow is carbon steel, the flaw acceptance criteria of Paragraph IWB-3650 of Reference 1 are used. This paragraph requires the use Appendix H of ASME Code, Section XI, which has screening criteria for determining the failure mode (linear elastic fracture mechanics (LEFM), elastic-plastic fracture mechanics (EPFM) or limit load).

- Determine the stress intensity factors at the flaw and perform a fatigue crack growth analysis to compare end-of-evaluation period flaw size to the allowable flaw size computed above.

- The ASME Section XI Code of record at Palisades is the 1989 Edition. However, for this evaluation the Addenda through 1990 will be used since prior to this Addenda, there were no provisions in the Code for performing flaw evaluation for ferritic piping and alternate means had to be used to meet the safety margins in the Code.

3 DESIGN INPUT

3.1 Design and Operating Conditions

The design and operating conditions of the CSW system are provided by Reference 2. The pressure and temperature data for CSW Line HB-23 is as follows:

- Design Temperature = 300°F
- Design Pressure = 100 psig
- Maximum Operating Temperature = 170°F
- Maximum Operating Pressure = 125 psig
- Normal Operating Temperature = 114°F
- Normal Operating Pressure = 65 psig

3.2 Pipe Dimensions

The CSW pipe where the indication was discovered is an 3-inch Schedule 40 pipe [3]. The nominal dimensions of the pipe are:

- Nominal Outer Diameter = 3.5 in.
- Nominal Wall Thickness = 0.216 in.

3.3 Material Properties

The CSW system pipe containing the indication is assumed to be fabricated from ASTM A106 Grade B carbon steel per Reference 3. The design allowable stress, S_m, of the weld metal is taken to be the same as that of the base metal of the pipe. At the normal operating temperature of 65°F [2], S_m is equal to 20,000 psi [5]. Therefore, the flow stress, σ_f, defined as 2.4 S_m, is equal to 48,000 psi. However, conservative default values derived from Appendix H of ASME Code, Section XI (S_m = 18,100 psi) are used in the evaluation.

3.4 Flaw Characterization

The indications are rounded indications located in the lower vertical elbow weld NSW-010A23 on Line HB-23 of the CSW system [4]. The inspection results summarized in References 4 and 6 show that the largest indication is 0.14 inches diameter rounded, centered near the neutral axis, 0.1 inches from the outer surface of the weld. The other indication is 0.125 inches in diameter. Using the flaw characterization rules of ASME Section XI, IWA-3300, this flaw is classified as a subsurface flaw. Per ASME Code, Section XI, IWA-3370, indications detected by radiographic examinations shall be considered to be linear indications. Hence, the lengths of the flaws are combined to give a total length of 0.265 inches. The depth of the combined flaw is the maximum diameter of the two indications, which is 0.14 inches. If the flaw is conservatively considered a surface flaw, the flaw depth to thickness ration is 0.65.

3.5 Applied Stresses

The applicable stresses at the location of the indication are provided by Reference 7 which contains stress results from a piping analysis of the CSW piping system. Maximum stresses due to pressure, deadweight, seismic loadings and thermal expansion are extracted from the piping analysis at the node representing the weld (Node 115) for use in this evaluation.

The following maximum stress values at Node 115 (beginning of elbow) are used herein:

- Pressure + Deadweight, P + DW = 0.517 ksi

- Pressure + Deadweight + Seismic, P+DW+SEIS = 0.965 ksi
- Thermal Expansion, T = 0.002 ksi

4 ASSUMPTIONS

1. The service life is assumed to be 40 years from the date of this evaluation (40 years + 20 years license extension).

2. For this evaluation is assumed that the location of the flaw will experience 400 cycles of the combined maximum load (Pressure + Deadweight + Seismic + Thermal) which correspond to 40 years of original plant life plus 20 years of license extension.

3. The piping material per the piping specification can be ASTM A-106 Grade B or A53 Grade B or SA-106 Grade B. While the mechanical properties of these materials are identical, ASTM A-106 Grade B will be assumed for this evaluation.

5 CALCULATIONS

5.1 Allowable Flaw Size Calculation

The material of the flaw is assumed to be ferritic steel SA-106 Grade and the maximum operating temperature of the CSW line is 170°F. Therefore, as determined from the screening criteria, the LEFM methodology described in ASME Code, Section XI, Appendix H [1] is used in this evaluation in lieu of the other two failure modes (EPFM and limit load). The technical approach consists of determining the critical flaw size in the pipe which corresponds to a stress intensity factor equal to the material fracture toughness. The allowable flaw size is derived from the critical flaw by applying the code specified safety factors.

In this evaluation, default ASME Code Section XI, Appendix H material properties at lower shelf temperature are conservatively used. The evaluation was performed using SI's computer program **pc-CRACK™** [8].

The **pc-CRACK™** output file for the analysis is presented in Appendix A. It shows that for the observed flaw length, the allowable flaw depth is 75% of wall thickness, which is greater than the depth of the observed flaw of 65% of wall thickness.

5.2 Stress Intensity Factors Calculation

A linear elastic fracture mechanics and fatigue crack growth evaluation is performed for the observed indication using **pc-CRACK™**. The fracture mechanics model of an elliptical surface flaw in an infinite plate, as illustrated in Figure 2, is conservatively used in this evaluation. The model with a flaw aspect ratio of 0.5 is used in the evaluation since the actual ratio is 0.53 for the pipe weld indication under evaluation.

Using the applied stresses presented in Section 3.5, the stress intensity factors due to the different load combinations are determined. In the calculation of stress intensity factors, the pressure stress is taken as the membrane stress, which is constant across the wall thickness. The stresses from the deadweight, seismic and thermal expansion moment loads are taken as linearly varying through-wall bending stresses.

The calculated stress intensity factors are presented in Figure 3.

5.3 End of Life Fatigue Crack Growth Analysis

Since the indication is assumed to be surface connected, the end of life flaw size due to fatigue crack growth is calculated using the fatigue crack growth rate for ferritic steels exposed to water environments.

The fatigue crack growth rate for carbon and low alloy steel in water environment is given by Appendix A of ASME Code, Section XI as:

da/dN = CL * SL * dK^5.95 for dK < dKtran
da/dN = CU * SU * dK^1.95 for dK >= dKtran

where,

dK = Kmax - Kmin
R = Kmin / Kmax

for R <= 0.25:

SL = 1.0 SU = 1.0 dKtran = 17.74

for 0.25 < R <= 0.65:

SL = 26.9 * R - 5.725 SU = 3.75 * R + 0.06
dKtran = 17.74*{(3.75 * R + 0.06)/(26.9 * R - 5.725)}^0.25

for 0.65 < R:

SL = 11.76 SU = 2.5 dKtran = 12.04

where,

CL = 1.0200e-012
CU = 1.0100e-007

for the selected units of force, kip, and length, inch.

The fatigue crack growth is performed for the assumed number of 400 cycles of the maximum combined loading. The initial flaw depth of 0.14 inches is used.

The results of the fatigue crack growth evaluation show that the flaw in the CSW pipe weld does not grow after 400 cycles of the maximum combined loading range. This is because the stress range and, therefore, the corresponding stress intensity factor range are relatively small.

The **pc-CRACK™** output file for the crack growth analysis is presented in Appendix A.

6 CONCLUSIONS AND DISCUSSIONS

Based on the results of the evaluation presented in this calculation package, the indications found during the inservice inspection of the CSW system Line are acceptable for continued operation based on the requirements of ASME Code, Section XI, IWB-3650. The allowable flaw depth for the observed combined flaw length is 75% of pipe wall thickness.

A fatigue crack growth analysis performed using a conservative fracture mechanics model and 400 cycles of the maximum combined loading shows that crack propagation by fatigue is not a concern as the flaw growth did not grow. This indicates that the allowable flaw depth will not be reached during plant operation including 20 years of life extension.

7 REFERENCES

1. ASME Boiler and Pressure Vessel Code, Section XI, 1989 Edition with Addenda through 1990.

2. Nuclear Management Company (NMC), Palisades Nuclear Plant Piping Class Summary, SI File No. PAL-09Q-201.

3. Consumers Energy, Palisades Plant Stress Isometric 03316, Drawing No. VEN-M-101, Sheet No.2746, Rev. 6, "Service Water From Engineered Safeguards Cooler V-27 C &D West," SI File No. PAL-09Q-202.

4. NMC Radiographic Examination Report, Sheet Number P-6-8001, dated 4/5/06, SI File No. PAL-09Q-203.

5. ASME Boiler and Pressure Vessel Code, Section III, Division 1, Appendices, 1989 Edition.

6. NMC Ultrasonic Thickness Examination Report, Sheet Number MA0-01, dated 4/27/06, SI File No. PAL-09Q-204.

7. Partial ADLPIPE Stress Analysis Output for CSW System Piping Analysis, EA-03316, 1/9/1995, SI File No. PAL-09Q-205.

8. **pc-CRACK™** for Windows, Version 3.1-98348, Structural Integrity Associates, 1998.

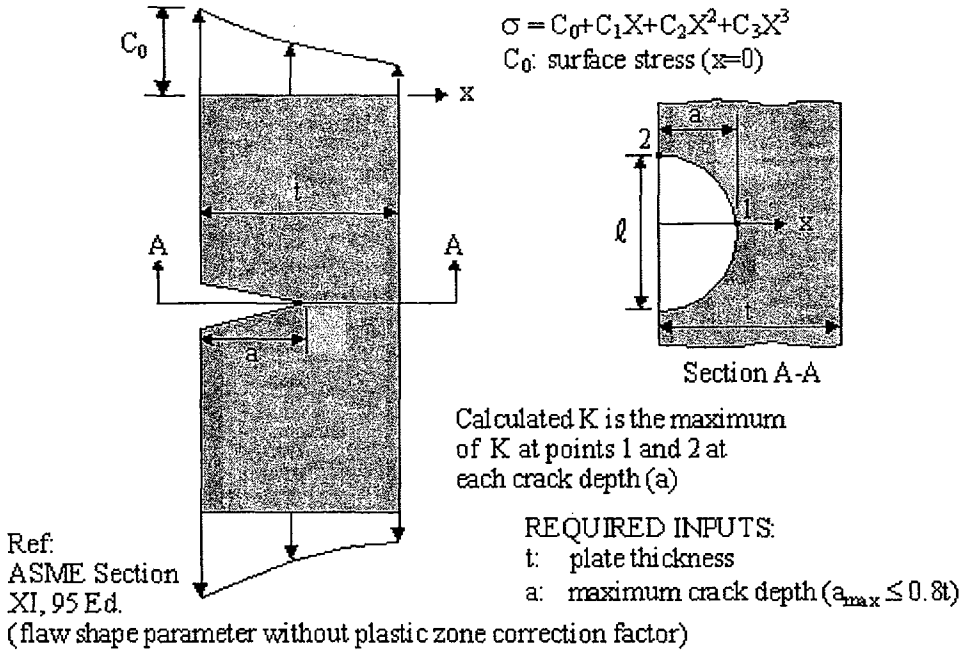

Figure 1: Elliptical Crack in Infinite Plate Model

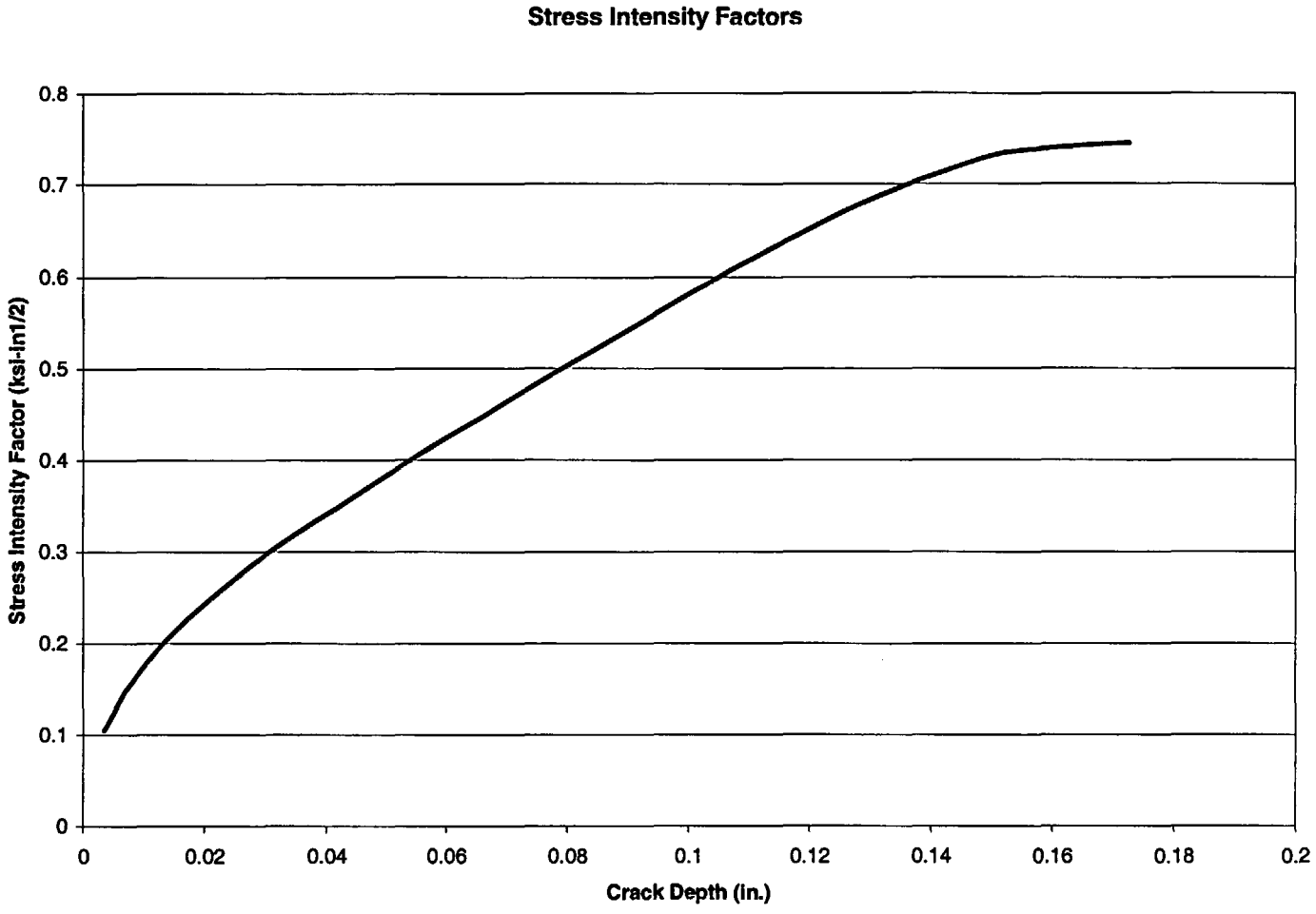

Figure 2: Applied Stress Intensity Factor

APPENDIX A

pc-CRACK OUTPUT FILES

Filename	Description	Pages
PAL_ALW.OUT	Allowable Flaw Size Calculation	A2 – A3
PAL_FCG1.OUT	Fatigue Crack Growth Analysis	A4 – A15

pc-CRACK Output File for Allowable Flaw Evaluation

```
                                tm
                        pc-CRACK   for Windows
                           Version 3.1-98348
                        (C) Copyright '84 - '98
                    Structural Integrity Associates, Inc.
                      3315 Almaden Expressway, Suite 24
                           San Jose, CA 95118-1557
                            Voice:  408-978-8200
                            Fax:    408-978-8964
                          E-mail: pccrack@structint.com


                        Allowable Flaw Size Evaluation
                Using ASME Section XI, IWB-3640/50 Procedures and Criteria
                     For Circumferential Crack in Carbon Steel Piping

Date: Mon May 01 12:29:13 2006
Input Data and Results File: PAL_ALW.CNS

Title: PALISADES, ESW PIPE, CRITICAL FLAW EVALUATION

Material: Seamless/Welded Wrought CS Pipe and Pipe Fitting, YS<=40ksi (Category 1)

Material properties:
   Design stress    =    18.1000
   Flow stress      =    43.4400
   Elastic modulus  = 26000.0000
   Poisson ratio    =     0.3000
   Yield stress     =    27.1000
   JIc:
     Lower shelf    =    45.0000
     Upper shelf    =   600.0000

The evaluation assumes default material properties
for a lower shelf temperature

Pipe geometry:
   Outer diameter   =     3.5000
   Wall thickness   =     0.2160

Crack geometry:
   Crack depth =     0.1400
   Crack length =     0.2650

   Kr'      =     0.0256
   Sr'      =     0.0134
   Sc       =     1.9077

The flawed pipe is assumed to fail by brittle fracture(LEFM).
The allowable flaw size is determined using code formulas.
Default safety factors for normal operating (incl. upset and test) condition.

Membrane stress (Pm)    =     0.5710 (safety factor =     2.7700)
Bending stress (Pb)     =     0.4480 (safety factor =     2.7700)
Expansion stress (Pe)   =     0.0020 (safety factor =     1.0000)
```

```
Design stress          =    18.1000
(Pm + Pb) / Sm =     0.0563
KIr (residual stress) =     0.0000  (safety factor =     1.0000)
Nominal pipe size=     3.0000
a/t             =     0.6481
l/circumference =     0.0241
allowable a/t   =     0.7500


                        End of pc-CRACK Output
```

pc-CRACK Output File for Fatigue Crack Growth Analysis

tm
pc-CRACK for Windows
Version 3.1-98348
(C) Copyright '84 - '98
Structural Integrity Associates, Inc.
3315 Almaden Expressway, Suite 24
San Jose, CA 95118-1557
Voice: 408-978-8200
Fax: 408-978-8964
E-mail: pccrack@structint.com

Linear Elastic Fracture Mechanics

Date: Mon May 01 12:30:50 2006
Input Data and Results File: PAL_FCG1.LFM

Title: PALISADES, ESW PIPE, FATIGUE CRACK GROWTH ANALYSIS

Load Cases:

Case ID	Stress Coefficients C0	C1	C2	C3	Type
Total	0.965	-4.148	0	0	Coeff

------Through Wall Stresses for Load Cases With Stress Coeff-------

Wall Depth	Case Total
0.0000	0.965
0.0173	0.893323
0.0346	0.821645
0.0518	0.749968
0.0691	0.67829
0.0864	0.606613
0.1037	0.534935
0.1210	0.463258
0.1382	0.39158
0.1555	0.319903
0.1728	0.248226

Crack Model: Elliptical Surface Crack in an Infinite Plate (a/l=0.5)

Reference: ASME Boiler and Pressure Vessel Code, Section XI, '95 Ed.
Flaw shape parameter is without plastic zone correction.

WARNING: The stress intensity factor (K) is the maximum of
K at the surface and K at the deepest point at each crack depth.

Crack Parameters:

Plate width: 0.2160
Max. crack size: 0.1728

Crack Size	Case Total
0.0035	0.0730043
0.0069	0.1031
0.0104	0.126088
0.0138	0.145373
0.0173	0.162275
0.0207	0.177471
0.0242	0.191585
0.0276	0.204768
0.0311	0.217127
0.0346	0.228793
0.0380	0.239861
0.0415	0.250408
0.0449	0.260663
0.0484	0.270693
0.0518	0.280372
0.0553	0.289731
0.0588	0.298798
0.0622	0.307594
0.0657	0.316243
0.0691	0.324987
0.0726	0.333532
0.0760	0.34189
0.0795	0.35007
0.0829	0.358083
0.0864	0.365936
0.0899	0.374191
0.0933	0.382319
0.0968	0.390326
0.1002	0.398215
0.1037	0.405992
0.1071	0.413659
0.1106	0.421651
0.1140	0.4297
0.1175	0.437667
0.1210	0.445556
0.1244	0.453367
0.1279	0.461103
0.1313	0.469093
0.1348	0.477352
0.1382	0.485553
0.1417	0.493699
0.1452	0.50179
0.1486	0.509825
0.1521	0.517955
0.1555	0.526485
0.1590	0.534972
0.1624	0.543417
0.1659	0.551819

0.1693	0.560177
0.1728	0.568493

Crack Growth Laws:

Law ID: CSteelinWater
Model: ASME Section XI - ferritic steel in water environment

da/dN = CL * SL * dK^5.95 for dK < dKtran
da/dN = CU * SU * dK^1.95 for dK >= dKtran
where
dK = Kmax - Kmin
R = Kmin / Kmax
for R <= 0.25:
SL = 1.0 SU = 1.0 dKtran = 17.74
for 0.25 < R <= 0.65:
SL = 26.9 * R - 5.725 SU = 3.75 * R + 0.06
dKtran = 17.74*{(3.75 * R + 0.06)/(26.9 * R - 5.725)}^0.25
for 0.65 < R:
SL = 11.76 SU = 2.5 dKtran = 12.04

where:
CL = 1.0200e-012
CU = 1.0100e-007
are for the selected units of:
force: kip
length: inch

Material Fracture Toughness KIc:

Material ID: Carbon Steel

Depth	KIc
0.0000	36.2000
0.2160	36.2000

Initial crack size= 0.1400
Max. crack size= 0.1728

Number of blocks= 40
Print increment of block= 1

Subblock	Cycles /Time	Calc. incre.	Print incre.	Crk. Grw. Law	Mat. K1c
Total	10	1	1	CSteelinWater	Carbon Steel

Subblock	Kmax Case ID	Kmax Scale Factor	Kmin Case ID	Kmin Scale Factor
Total	Total	1.0000		

Crack growth results:

Total Cycles /Time	Subblock Cycles /Time	Kmax	Kmin	DeltaK	R	DaDn /DaDt	Da	a	a/thk
Block: 1									
1	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
2	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
3	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
4	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
5	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
6	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
7	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
8	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
9	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
10	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 2									
11	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
12	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
13	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
14	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
15	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
16	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
17	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
18	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
19	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
20	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 3									
21	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
22	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
23	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
24	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
25	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
26	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
27	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
28	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
29	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
30	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 4									
31	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
32	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
33	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
34	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
35	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
36	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
37	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
38	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
39	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
40	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

Block:	5								
41	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
42	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
43	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
44	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
45	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
46	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
47	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
48	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
49	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
50	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	6								
51	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
52	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
53	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
54	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
55	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
56	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
57	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
58	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
59	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
60	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	7								
61	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
62	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
63	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
64	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
65	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
66	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
67	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
68	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
69	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
70	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	8								
71	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
72	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
73	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
74	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
75	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
76	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
77	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
78	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
79	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
80	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	9								
81	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
82	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
83	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
84	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
85	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
86	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
87	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
88	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

89	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
90	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 10									
91	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
92	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
93	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
94	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
95	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
96	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
97	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
98	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
99	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
100	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 11									
101	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
102	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
103	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
104	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
105	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
106	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
107	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
108	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
109	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
110	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 12									
111	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
112	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
113	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
114	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
115	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
116	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
117	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
118	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
119	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
120	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 13									
121	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
122	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
123	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
124	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
125	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
126	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
127	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
128	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
129	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
130	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 14									
131	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
132	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
133	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
134	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
135	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

136	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
137	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
138	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
139	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
140	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 15									
141	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
142	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
143	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
144	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
145	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
146	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
147	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
148	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
149	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
150	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 16									
151	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
152	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
153	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
154	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
155	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
156	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
157	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
158	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
159	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
160	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 17									
161	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
162	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
163	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
164	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
165	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
166	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
167	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
168	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
169	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
170	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 18									
171	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
172	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
173	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
174	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
175	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
176	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
177	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
178	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
179	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
180	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 19									
181	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
182	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

183	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
184	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
185	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
186	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
187	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
188	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
189	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
190	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	20								
191	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
192	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
193	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
194	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
195	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
196	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
197	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
198	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
199	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
200	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	21								
201	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
202	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
203	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
204	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
205	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
206	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
207	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
208	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
209	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
210	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	22								
211	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
212	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
213	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
214	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
215	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
216	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
217	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
218	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
219	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
220	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	23								
221	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
222	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
223	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
224	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
225	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
226	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
227	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
228	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
229	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
230	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

Block:	24								
231	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
232	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
233	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
234	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
235	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
236	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
237	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
238	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
239	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
240	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	25								
241	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
242	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
243	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
244	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
245	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
246	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
247	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
248	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
249	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
250	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	26								
251	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
252	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
253	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
254	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
255	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
256	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
257	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
258	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
259	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
260	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	27								
261	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
262	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
263	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
264	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
265	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
266	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
267	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
268	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
269	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
270	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block:	28								
271	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
272	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
273	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
274	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
275	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
276	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
277	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
278	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

279	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
280	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 29									
281	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
282	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
283	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
284	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
285	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
286	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
287	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
288	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
289	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
290	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 30									
291	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
292	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
293	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
294	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
295	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
296	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
297	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
298	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
299	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
300	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 31									
301	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
302	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
303	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
304	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
305	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
306	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
307	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
308	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
309	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
310	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 32									
311	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
312	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
313	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
314	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
315	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
316	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
317	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
318	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
319	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
320	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 33									
321	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
322	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
323	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
324	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
325	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

326	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
327	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
328	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
329	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
330	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 34									
331	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
332	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
333	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
334	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
335	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
336	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
337	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
338	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
339	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
340	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 35									
341	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
342	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
343	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
344	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
345	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
346	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
347	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
348	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
349	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
350	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 36									
351	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
352	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
353	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
354	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
355	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
356	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
357	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
358	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
359	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
360	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 37									
361	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
362	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
363	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
364	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
365	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
366	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
367	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
368	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
369	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
370	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
Block: 38									
371	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65
372	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14	0.65

373	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
374	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
375	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
376	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
377	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
378	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
379	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
380	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65

Block: 39

381	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
382	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
383	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
384	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
385	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
386	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
387	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
388	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
389	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
390	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65

Block: 40

391	1	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
392	2	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
393	3	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
394	4	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
395	5	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
396	6	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
397	7	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
398	8	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
399	9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65
400	10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-014	0.14 0.65

End of pc-CRACK Output