



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.

Administrator, Region III, USNRC Project Manager, Palisades, USNRC

Resident Inspector, Palisades, USNRC

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

PALISADES NUCLEAR PLANT ENGINEERING PROGRAMS DEPARTMENT

Review and Approval Summary

TITLE: ISI REPORT 3-9
Mushel W. Clehr July 27, 2006 ISI Engineer / MWAcker Date
ISI Engineer / MWAcker Date
B Van Wagnus 7/28/06 ASME Programs and Varves Supervisor / BVVanWagner Date
ASME Programs and Valves Supervisor / BVVanWagner Date
2H Jours 7/31/06
Engineering Programs Manager / THEouty 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:

Mfg National Component Manufacturer Serial No. Board No. State No. Steam Generator Combustion Eng NB22864 CE-70277-1 M358176M **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, Tackson, MI 4920 (Name and Address of Owner)
2.	Plant Palisades Nuclear Plant, 27780 Blue Star Memoriel Huy, Covert, MI 49043 (Name and Address of Plant)
	(Name and Address of Plant)
3.	Plant Unit4. Owner Certificate of Authorization (if required)4
5.	Commercial Service Date 12/31/11 6. National Board Number for Unit
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7.	Com	ponents	Inspected
	~~111	70110110	Timppeecee

Component or Appurtenance	Manufacturer or Installer	Manufacturer or Installer Serial No.	State or Province No.	National Board No.
Steam Generalor	Combustion Engineering	CE-70277-1	M358176M	NB22864
RPV Hoad	Combustion Engineering	CE-66110	M96725M	NB 20827
	SEE "NDE RESULT	SOMMAR	γ ¹¹	
	REPORT ATT			
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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 5/12/195 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 IST Report *NDE Results Survey."
11. Abstract of Conditions Noted See ISI Report "NDE Results Surveyong" 12. Abstract of Corrective Measures Recommended and Taken See ISI Report "NDE Results Surveyong"
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) Expiration Date
Date July 27 15 zook Signed Consumes Energy By Molech NMC Owner
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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
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 have inspected the components described in this Owner's Report during the period 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.
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 have inspected the components described in this Owner's Report during the period 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.
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, (12/82)

PALISADES	ND!	E RESULTS	SUMMA	RY	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				
	moo	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/0	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 Vişual	
		PCS-012 Weld 8 (DPT-0112B/0	D) Acceptable	BM Visual	
		PCS-013 Weld 1 (DPT-0122A/0	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/I	D) Acceptable	BM Visual	
		PCS-014 Weld 13 (DPT-0122B	i/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				
	17411	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	υτ	
		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	UΤ	
		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	

Category	System	Component ID E	isposition	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	υτ	
		Regen Heat Exchanger Weld E- 56B-07	Acceptable	UT	
	SG1	SG No.1 E-50A Weld 1-102-251/	A Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251/ IRS	A- Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251	3 Acceptable	UT	
		SG No.1 E-50A Weld 1-102-251I IRS	3- Acceptable	UT	

Category	System	Component ID D	isposition	Exam	Comments
		SG No.1 E-50A Weld 1-104-251	Acceptable	UT	
		SG No.1 E-50A Weld 1-104-251- IRS	Acceptable	υτ	
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	√ T-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	МТ	
		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	
1		RPVCH S/N 54 Nut	Acceptable	МТ	
		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 1 2BT-B-1-16	A- Acceptable	VT-1	
		Primary Coolant Pump P-50A 1 2BT-W-1-16	A- 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 Manwa #1 Studs	y Acceptable	VT-1	
		SG No.2 E-50B Primary Manwa #2 Studs	y Acceptable	VT-1	
	SG2	SG No.1 E-50A Primary Manwa # 1	y Acceptable	VT-1	
		SG No.1 E-50A Primary Manwa # 2	y Acceptable	VT-1	
B-N-1	RPV				
		RPV-Vessel Interior	Acceptable	VT-3	
C-A	SG1	4 404 044			
		1-101-241	Acceptable	UT	

Category	System	Component ID	Disposition	Exam	Comments
		1-102-221	Acceptable	UT	
		1-201-246	Acceptable	UT	
С-В					
	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(H720	6) Acceptable	PT	
		ESS-6-LTC-1A-218PL1-4(H72	2) Acceptable	PT	
	FWS				
	rvvs	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				
	55 1	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	i) 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	
	нѕв	D 00D 00			
		P-66B-02	Acceptable	VT-3	
	LSB	P-67B-02	Acceptable	VT-3	
	PCS				
	FUS	PCS-4-PSS-1P1-5PR(H-22A)	Acceptable	VT-3	
	PZR				
		Pressurizer T-72 Weld 4-984/5 984-SS	5- Acceptable	VT-3	
	RGA	Regen Heat Exchanger Weld	E- Acceptable	VT-3	
		56A-S-01	_ /(000)(00)	V. 5	
	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		, , , , , , , , , , , , , , , , , , , ,		
	LANO	AFW-010 Weld 4	Acceptable	UT	
		AFW-012 Weld 9	Acceptable	UT	
	HED	UED 004 W. U. 5			
		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	υŢ	
		MSS-076 Weld 3	Acceptable	UΤ	
		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	UΤ	
		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	υτ	
		SDC-005 Weld 3LU	Acceptable	UΤ	
		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	Commant CCC 004A	Aggregation	VT 2	·
		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	
٠		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

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

								ITEM	19400
1.	Owner	Cons	sumers Energy Co	mpany		Date		6/26/2006	
2.	Plant	Palis	ades Nuclear Pow	Name er Plant		Sheet	1	of	2
		2778	30 Blue Star Highw	Name ay, Covert, MI 4904	3		W	/O# 19400	
			-	Address		Repai	r Organizat	ion P.O. No., Job	No., etc
3.	Work Pe	rform	· —	ar Management Con	npany, LLC	Type Code Syn	nbol Stamp	N/A	
				Name r Hwy, Covert, MI 49	043	Authorization		N/A	
		_		Address		Expiration Date	•	N/A	
4.	Identific	ation	of System SW	/S		Code Class		Class 3	
5.	(a) Appli	cable	Construction Co	de B31.1	,	1955	Edition		
				Addenda n/	a	Code Case r	ı/a		
	(h) Amn	loobl	a Edition of South	— on VI I Willead for Dr		- ant Antivity 1	989 With No	a Addondo	
	(b) App	ICabi	e Edition of Section	on XI Utilized for Re	epain Kepiacem	ent Activity	1969 AAIMI M	Addenda	
	(c) Appl	icable	e Section XI Code	Cases None		· · · · · · · · · · · · · · · · · · ·			
6.	Identific	ation	of Components						
	Name of		Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
r	Discharg Nozzle		Rotating Equip Repair Inc	N/A	N/A	PO#G0271087	2005	Installed	No
	Pump Colu	ımn	Rotating Equip Repair Inc	N/A	N/A	PO#P806660	2005	Installed	No
	Pump Bo	wl	Rotating Equip Repair Inc	N/A	N/A	PO#G0254628	2005	Installed	No
						ļ			
r									
	. Descrip	otion ·	of Work	Rebuild Service Wa	ter Pump P-7C U	Ising Rebuilt Bowl A	ssembly per	EAR-2001-0542	·
8	. Tests o	ondu	•	Hydrostatic [Pneumatic	Nominal Op			Exempt _
				Other 🗀	Pressure	psi	Test Te	mp.	*F
C	Other: N/A	<u> </u>							

ITE:	M (9400)
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
N/A	, occion xi.
Type Code Symbol Stamp	
Certificate of Authorization No. N/A Expiration Date N/A	
made the source of the source	2006
Signed Mely O. Det , ASME Program Engineer Date (City 2)	2006
CERTIFICATE OF INSERVICE INSPECTION	
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure	e 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 and state that to the best of my knowledge and belief, the Owner has performed examinations and	
measures described in this Owner's Report in accordance with the requirements of the ASME Cod	
Theasures described in this Owner's Report in accordance with the requirements of the Advict Coo	e, occion XI.
By signing this certificate neither the Inspector nor his employer makes any warranty, expr	essed or implied,
concerning the examinations and corrective measure described in the Owner's Report. Furt	hermore, neither
the Inspector nor his employer shall be liable in any manner for any personal injury of property dan	nage or a loss of
any kind arising from or connected with this inspection.	
LIBLA Commissions 141 202702	
Inspector's Signature Commissions MI 300762 National Board, Province and End	orsements
Date <u>July 25</u> , 2006	
· · · · · · · · · · · · · · · · · · ·	

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

							ITEM	46 92 0
1. (Owner	Consumers Energy C	ompany		Date		5/1/2006	
			Name					
2.	Plant	Palisades Nuclear Po	Name		Sheet	1	of	2
		27780 Blue Star High	way, Covert, MI 49043	3		V	/O# 26320	
			Address		Repai	r Organizat	ion P.O. No., Job	No., etc
3. 1	Work Pe	rformed by Own			Type Code Sym	bol Stamp	N/A	
			Name Same		Authorization		N/A	
			Address		Expiration Date	ı	N/A	
5 .	Identific	ation of System E	SS		Code Class		Class 2	
5.	(a) Appli	cable Construction C	ode B31.1	<u> </u>	1989 Edition	Edition		
			Addenda n/a		Code Case n	/a		
	(b) Ann	licable Edition of Sec	tion XI Utilized for Re	nair/Penlaceme	ent Activity 1	989 With N	n Addenda	
				panneplacem	ent Activity -	303 WILLI 14	o Addenda	
	(c) App	licable Section XI Co	de Cases None					
6.	Identific	ation of Components	•					
(Name o		Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	Snubbe	r Anchor Darlin	g ADH-1000-2487	n/a	PO#GO284322	1999	Installed	No
				<u> </u>				
						ļ		
] 1		
				<u> </u>		 		
		İ		į		1		
				-		 		
	*******			<u> </u>				
7.	Descri	ption of Work	Replaced Snubber S	NB-38 per Snut	ber Program			
8.	Tests	conducted:	Hydrostatic	Pneumatic	Nominal Op	erating Pre	ssure	Exempt
			Other _	Pressure	psi	Test Te	emp.	° F
Ot	her: n/a	a						·

ITEN . Remarks	266/200
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 NoN/A Expiration Date N/A	
M-16/1/10	
Signed ///www. ASME Program Engineer Date True 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
bysect	have inspected
and state that to the best of my knowledge and belief, the Owner has performed examinations and	
measures described in this Owner's Report in accordance with the requirements of the ASME Code	e, Section XI.
By signing this certificate neither the Inspector nor his employer makes any warranty, expre	essed or implied
concerning the examinations and corrective measure described in the Owner's Report. Furth	nermore, neither
the Inspector nor his employer shall be liable in any manner for any personal injury of property dam	
any kind arising from or connected with this inspection.	
Commissions MI 300762	
Inspector's Signature Commissions Mi 300762 National Board, Province and Endo	rsements
Date National Board, Province and Endo	
Date	

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

								ITEM	(67 ⁷ 59)
1. C)wner	Cons	sumers Energy Con	npany		Date		6/26/2006	
2. P	Name Palisades Nuclear Power Plant					Sheet	1	of	2
				Name	·			<u> </u>	
		2778	80 Blue Star Highwa	y, Covert, MI 49043	·			WO# 16739	
2 W	Vork Per	form		ddress		Repai	r Organiza	tion P.O. No., Job	No., etc
J. 1	IOIK FEI	·		Name		Type Code Sym	ibol Stam	N/A	
			·	Same		Authorization		N/A	
				ddress	 	Expiration Date	•	N/A	
4. l	dentifica	tion	of System SW	'S	- 	Code Class		Class 3	
5. (a) Applic	cable	Construction Cod	le ASME B31.1	<u>,</u>	1955	Editio	n	
				Addenda n/a		Code Case	/a		
	(b) Appl	icable	e Edition of Sectio	n XI Utilized for Re	pair/Replacem	ent Activity 1	989 With 1	- No Addenda	
	(c) Appli	icable	e Section XI Code	Cases None		_	· · · · · · · · · · · · · · · · · · ·	·	
6. 1	dentifica	ation	of Components						
	Name of ompone		Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
N	/V-SW13	6	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
	uds 5/8" NC X4" L		Muskon Inc	n/a	n/a	PO#P805467	2006	Installed	No
He	x Nuts 5	/8"-	Muskon Inc	n/a	n/a	PO#P805467	2006	Installed	No
							- - - -		
		-							
									
	*								
7.	Descrip	tion	of Work <u>f</u>	Replace Valve MV-S	<u>.</u> W136	<u> </u>			<u>I</u>
8.	Tests c		_	- Hydrostatic	Pneumatic	Nominal Ope	erating Pre	essure 🗸	Exempt
			(Other 📋	Pressure —	psi	Test T	emp	° F
Oth	er:								

. Remarks	ITEM (15739)
None	

CERTIFICATE OF COMP	PLIANCE
We certify that the statements made in the report are correct and this confo	
AI/A	The to the togate of the together the togeth
Type Code Symbol Stamp	
Certificate of Authorization No. N/A Expiration D	ate N/A
Signed Middle Of , ASME Program Eng	pineer Date July 26 . 2006
Signed , ASME Program Eng	pineer Date July 26, 2006
CERTIFICATE OF INCEDITOR	
CERTIFICATE OF INSERVICE	E INSPECTION
I, the undersigned, holding a valid commission issued by the N	
Inspectors and the State or Province of Michigan	and employed
by <u>HSB-CT</u> of of	Connecticut have inspected
the components described in this Owner's Report during the period and state that to the best of my knowledge and belief, the Own	
and state that to the best of my knowledge and beller, the Own measures described in this Owner's Report in accordance with	
illedautes described in the Office of toport in accordance	the requirements of the French 2000, 2000
By signing this certificate neither the Inspector nor his em	
concerning the examinations and corrective measure desc	ribed in the Owner's Report. Furthermore, neither
the Inspector nor his employer shall be liable in any manner for	r any personal injury of property damage or a loss of
any kind arising from or connected with this inspection.	
KSBlake Commissions	MI 300762
Inspector's Signature	MI 300762 National Board, Province and Endorsements
Date	

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

						ITEM	741 9 16
. Owner C	Consumers Energy Com	pany		Date		6/26/2006	
– Plant F	l Palisades Nuclear Powe	Name r Plant		 Sheet	1	of	2
riant r		vane		Sneet			
2	27780 Blue Star Highway				1	NO#21496	
Work Borfo		ddress		Repair	r Organiza	tion P.O. No., Job	No., etc
Work Perfo	· · · · · · · · · · · · · · · · · · ·	lame		Type Code Sym	bol Stamp		
		Same		Authorization		N/A	
ldentificati	Adion of System	dress		Expiration Date Code Class		N/A Class 2	
(a) Applica	able Construction Code	e ASME B31.1		1955	Edition	1	
		Addenda n/a	·	Code Case n	/a		
(b) Applic	able Edition of Section	— N XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	- lo Addenda	
(c) Applic	able Section XI Code (Cases None		_			
	ion of Components					····	
			Τ		Г		T
Name of Component	Name of t 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		3247GS	n/a	PO#G0195946- CQ	1996	Installed	No
4"x1 1/2" Con Reducer	nc 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. Descripti	ion of Work <u>F</u>	leplaced SIRW Tan	k Recirculation I	Pump P-74 per EAR	2003-0270	<u> </u>	
B. Tests co	nducted: H	lydrostatic	Pneumatic	Nominal Ope	erating Pre	essure 🔽	Exempt
	c	Other _	Pressure	psi	Test Te	emp.	°F
Other: N/A			_				

Remarks ITE	em Maria
None	
CERTIFICATE OF COMPLIANCE	
CERTIFICATE OF COMPLIANCE	04! VI
We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Code	e, Section XI.
Type Code Symbol Stamp N/A	
Certificate of Authorization No. N/A Expiration Date N/A	<u> </u>
Chillis was some The 31	ZOSL
Signed / Michael Clark , ASME Program Engineer Date July 26	, 2002
CERTIFICATE OF INSERVICE INSPECTION	
CENTRIONIE OF INCENTION ECTION	
The state of the s	
, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressurnspectors and the State or Province ofMichigan	re Vessel and employed
rispectors and the state of Province of	and employed have inspected
to May	y <u>10,2006</u> ,
and state that to the best of my knowledge and belief, the Owner has performed examinations an	
neasures described in this Owner's Report in accordance with the requirements of the ASME Co	de, Section XI.
By signing this certificate neither the Inspector nor his employer makes any warranty, exp	ressed or implied.
concerning the examinations and corrective measure described in the Owner's Report. Fu	rthermore, neither
the Inspector nor his employer shall be liable in any manner for any personal injury of property da	
any kind arising from or connected with this inspection.	
KSBA La Commissions MI 200762	
Inspector's Signature Commissions Mi 300762 National Board, Province and End	dorsements
	
Date	

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

						ITEM	70EV.		
1. Owner	Consumers Energy Co	ompany		Date		6/26/2006			
2. Plant	Palisades Nuclear Pov	Name ver Plant	 	Sheet	1 of 2				
		Name				<u> </u>			
	27780 Blue Star Highw	vay, Covert, MI 49043	3		\	NO#27257			
		Address		Repai	r Organiza	tion P.O. No., Job	No., etc		
3. Work Per	formed by Enert			Type Code Sym	bol Stamp	N/A			
	2950 Birtch	Name Street,Brea,CA 92821	Ì	Authorization		N/A			
		Address	·	Expiration Date	1	N/A	···-		
4. Identifica		CW		Code Class		Class 3			
5. (a) Appli	cable Construction Co	ode ANSI B16.4	,	1981	Edition	1			
		Addenda n/a	ı	Code Case n	/a				
(b) Appl	icable Edition of Secti	 ion XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda			
			•	_	-				
	icable Section XI Code	e Cases		-					
6. Identific	ation of Components								
Name of		Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)		
CV-0826 Co Heat	CW Enertech	S/N 10315	n/a	PO#2276	2006	Corrected	N		
Exchange Control Va									
			<u> </u> 			· · · · · · · · · · · · · · · · · · ·			
							ļ		
			 						
_			l <u></u>						
			1						
<u> </u>			<u> </u>	<u> </u>					
				1					
7. Descri	otion of Work	Installed hard stop a	nd repaired area	s of Erosion/Cavitat	ion on ID of	Valve Body	•		
8. Tests o	onducted:	Hydrostatic	Pneumatic	Nominal Ope	erating Pre	ssure 🗸	Exempt		
		Other _	Pressure	NOP psi	Test Te	emp. NOT	°F		
Other: n/a	i								

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 Matter Och , 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.
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements
Date

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

							ITEM	240E			
1. Owner	Owner Consumers Energy Company Date 6/26/2006										
2. Plant	Palisado	es Nuclear Power	Name r Plant	Sheet 1 of 2							
			Name								
	27780 E		, Covert, MI 4904	3			NO#27405				
3. Work Pe	erformed		ddress		Repair	r Organiza	tion P.O. No., Job	No., etc			
0. 1101K1 (omica		lame		Type Code Sym	bol Stamp					
			Same		Authorization		N/A				
			dress		Expiration Date		N/A				
4. Identific	cation of	System CCV	· · · · · · · · · · · · · · · · · · ·		Code Class		Class 3				
5. (a) App	licable Co	onstruction Code	ANSI B16.4		1981	Edition	1				
			Addenda n/a	a	Code Case n	/a					
(b) App	plicable E	dition of Section	— XI Utilized for Re	pair/Replaceme	ent Activity 19	989 With N	lo Addenda				
(c) Apr	olicable S	ection XI Code (Cases None		_						
		Components					· · · · · · · · · · · · · · · · · · ·				
6. Identifi	cation of	Components				•					
Name (Compon		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 (Heat		Enertech	S/N 11524	n/a	PO#P808270	2006	Installed	No			
Exchang Control V											
			·	<u> </u>							
			 	<u> </u>							
						 					
1			,		,						
-											
<u> </u>			<u> </u>	1]					
7. Descr	iption of	Work <u>Ir</u>	stalled hard stop a	nd repaired area	s of Erosion/Cavitati	on on ID o	Valve Body				
8. Tests	conducte	ed: H	ydrostatic	Pneumatic	Nominal Ope	erating Pre	essure 🗸	Exempt			
		o	ther 🗌	Pressure	psi	Test To	emp.	° F			
Other: n/	/a										

. 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. NA Expiration Date N/A
Signed Make V. Con , ASME Program Engineer Date July 24 , 2004
V
CERTIFICATE OF INSERVICE INSPECTION
CENTIFICATE 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.
measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section At.
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.
CommissionsMI 300762
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Date
Date

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

								IIEM I	A-Alox)			
1.	Owner	Consumers E	nergy Com	pany		Date 6/26/2006						
2.	Plant	Palisades Nuc	=	Name r Plant		Sheet 1 of 2						
		27780 Blue St	-	Name y, Covert, MI 49043			,	WO# 25184				
_				ddress		Repair	r Organiza	tion P.O. No., Job	No., etc			
3.	Work Pei	formed by		Management Com	pany, LLC	Type Code Sym	bol Stam	N/A				
		27780		Hwy, Covert, MI 490	143	Authorization		N/A				
				ldress		Expiration Date		N/A	·			
4.	Identifica	ation of Syster	n SWS	<u> </u>		Code Class		Class 3				
5.	(a) Appli	cable Constru	ction Code	ASME B31.1	<u> </u>	1973 Edition	Editio	n				
				Addenda 197	'4 Addend	Code Case n	/a					
	(b) Anni	icable Edition	of Section	 n XI Utilized for Re	nalr/Renlacem	ent Activity 1	080 W/ith N	- lo Addenda				
					pannepiacem	-	903 V III I	TO Addenda	· -"·			
		icable Section		Cases n/a	 		-					
6.	Identific	ation of Comp	onents									
	Name of		e of acturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)			
	CV-082	l Fis	sher	S/N17545158	n/a	PO#P806452	2006	Installed	No			
	MV-SW7	59 Ve	elan	S/N6615405-02	n/a	OP#P806519	2006	Installed	No			
								<u> </u>				
_												
L												
7	Doscri	otion of Work	D.	enlaced Valve CV-0	821 and Install	ed new Isolation Valv	(e M\/-S\A/	769	1			
,				epiaceu valve CV-L	OE I AND INSIAN							
8	. Tests o	onducted:	Н	ydrostatic 🗌	Pneumatic	Nominal Ope	erating Pre	essure 🗹	Exempt			
			o	ther 🗌	Pressure	psi	Test T	emp.	°F			
(Other: n/a	ı										

. Remarks
n/a
OFFICIATE OF COMPLIANCE
CERTIFICATE OF COMPLIANCE We contifu that the statements made in the properties content and this conforms to the requirements of the ASME Code. Section XI
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
Certificate of Authorization No. N/A Expiration Date N/A
Signed Muchel W. Och , 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, neithe
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.
Va 2 2 4
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements
Date

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

							ITEM	25(6)(6)
. Owner	Consumers	Energy Com	pany		Date		6/26/2006	
. Plant	Palisades N	-	Name r Plant		Sheet	1	of	2
			Name			•	<u> </u>	
	27780 Blue	Star Highway	y, Covert, MI 49043			٧	VO# 25693	
187 - I. D.			dress		Repai	r Organizat	ion P.O. No., Job	No., etc
. WORK PE	erformed by		Management Comp	bany, LLC	Type Code Sym	bol Stamp	N/A	
	2778		Hwy, Covert, Mi 490	43	Authorization		N/A	
			dress		Expiration Date	!	N/A	
Identific	cation of Syst	em SWS	<u> </u>	<u> </u>	Code Class		Class 3	
(a) App	licable Constr	ruction Code	ASME B31.1	,	1973 Edition	Edition		
			Addenda 197	4 Addend	Code Case n	/a		
(b) App	olicable Editio	on of Section	 XI Utilized for Rep	pair/Replaceme	ent Activity 1	989 With N	o Addenda	
(c) Apr	olicable Section	on XI Code (cases n/a		_			
. Idenun	cation of Com	iponents	<u> </u>			т т		
Name o		ime of ufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
CV-082	22 1	Fisher	S/N17545159	n/a	PO#P806452	2006	Installed	No
MV-SW	770	Velan	Model F12-11X13- BC2A	n/a	PO#P806519	2006	Installed	No
		·				-		
		<u>.</u> .						
								<u> </u>
<u> </u>								
7 Dage	iption of Wor		lenlaced Valva CV 0	822 and Install	l ed new Isolation Val	1 NOV SIA77	770	<u> </u>
7. Descr	ipaon of won	, <u>r</u>	cpiaceu vaive CV-0	OZZ KIU IIISIZIII	ed new isolation var	AE 101A-2AA	10	
8. Tests	conducted:	н	lydrostatic 🗌	Pneumatic	Nominal Ope	erating Pre	ssure 🔽	Exempt
		o	Other 🗌	Pressure	psi	Test Te	mp.	°F
Other: n/	'a							

Remarks					ITEM	25690
n/a						

	CERTI	FICATE OF COM	PLIANCE			
We certify that the statemen	ts made in the report are	e correct and this conf	orms to the requ	irements of the ASM	IE Code, S	ection XI.
Type Code Symbol Stamp		/A	·			
Certificate of Authorization	lo N/A	Expiration D	\ata	N/A		
Certificate of Authorization in	10 11	Expiration L				
Signed / Mad	freth	, ASME Program En	gineer Date	July 26	,	2006
					-	
		· ··		 		
	CERTIFICA	TE OF INSERVIC	E INSPECTION	ON		
, the undersigned, holdin	ng a valid commissi	on issued by the N	lational Board	d of Boiler and P	ressure \	Vessel
nspectors and the Sta				and i		and employed
Y HSB-CT	··· · · · · · · · · · · · · · · · · ·	of	Connecticu			have inspected
he components describe and state that to the best						
neasures described in the						
	·		•			
By signing this certifica						
concerning the examina						
he Inspector nor his em any kind arising from or o			any persona	ar injury or prope	rty dama	ige of a loss of
any mile enoung norm or t	1/02/10	•				
	GOloke_	Commissions		MI 300762 pard, Province ar		
Inspector's Sig	nature		National Bo	oard, Province ar	nd Endor	sements
Date	July 26	. 200%				
		,				

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

								ITEM	(6)(6)
1.	Owner	Consumers Energy	Company			Date		6/26/2006	
2.	Plant	Palisades Nuclear F	Name Power Plant			Sheet	1	of	2
		27780 Blue Star Hig	Name hway, Cove	rt, MI 49043	<u> </u>			NO#29819	
			Address			Repai	ir Organiza	tion P.O. No., Job	No., etc
3.	Work Per	formed by O	wner			Type Code Syn	nbol Stamp	N/A	
			Name Same			Authorization		N/A	,
			Address			Expiration Date)	N/A	
4.	Identific	ation of System	VAS			Code Class		Class 3	
5.	(a) Appli	cable Construction	Code AS	ME B31.1	,	1955	Edition	•	
			Add	enda n/a	1	Code Case r	√a		
	(b) App	icable Edition of Se	ection XI Uti	lized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda	
	(c) Appl	icable Section XI C	ode Cases	None		-			
6.		ation of Componen		***************************************					
	Name of	.		nufacturer erial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	Tube Plu	gs Heat Exchan		n/a	n/a	PO#663	2005	Installed	No
r									
-				-			 		
L									
		1			1		1 1		
┢									
L									
┞									
با					1	<u> </u>	1		
7	. Descri	ption of Work	Plugged	tube in VHX	-4 Heat Exacan	ger			
8	. Tests o	onducted:	Hydrost	atic 🗌	Pneumatic	Nominal Operating Pressure 🗹 Exem			Exempt
			Other []	Pressure	psi	Test Te	emp	° F
C	Other: n/a	l							

. 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.
N/A
Type Code Symbol Stamp
Certificate of Authorization No. N/A Expiration Date N/A
Signed Michal W. Och ASME Program Engineer Date June 27 2006
The state of the s
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 <u>HSB-CT</u> of <u>Connecticut</u> have inspected the components described in this Owner's Report during the period <u>November 18,2004</u> to <u>May 10,2006</u> ,
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.
Ve-2 11
Inspector's Signature Commissions Mi 300762 National Board, Province and Endorsements
Inspector's Signature Date
Date

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

								ITEM	79696
1.	Owner	Consumers E	nergy Com	pany		Date		6/26/2006	
2.	Plant	Palisades Nu	=	lame Plant		Sheet	1	of	2
		27780 Blue S	-	lame /, Covert, MI 4904	 3		\	NO#26963	
				idress		Repai	r Organiza	tion P.O. No., Job	No etc
3.	Work Per	formed by	Owner			Type Code Syn	-		,
				ame		Authorization	iboi stamp	N/A	
				Same		Expiration Date)	N/A	
4.	Identifica	ation of Syste		dress		Code Class		Class 1	
5.	(a) Appli	cable Constru	ction Code	ASME Section	m ,	1977	Edition	ı	
				Addenda n/a	a	Code Case r	n/a		
	(b) App	icable Edition	of Section	 XI Utilized for Re	epair/Replaceme	ent Activity 1	1989 With N	o Addenda	
	(c) Appl	icable Section	n XI Code (Cases None		-			<u> </u>
6.		ation of Comp							
	Name o		ne of facturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	Tube Plu		nghouse Company	n/a	n/a	PO#1281	2005	Installed	No
Γ									
┢					 				<u> </u>
_					 		<u> </u>		
\vdash	· · · ·				 		 		
							11		
							1		
_ 7	. Descri	ption of Work	P	lugged 22 tubes in	the "A" Steam G	enerator	<u>, </u>		
8		onducted:		ydrostatic	Pneumatic	Nominal Op	erating Pre	ssure 🔽	Exempt
			o	ther _	Pressure	psi	Test Te	emp.	° F
(Other:								

Remarks 26969
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.
N/A
Type Code Sympol Stamp
Certificate of Authorization No. N/A Expiration Date N/A
Signed Matal G. Ch. ASME Program Engineer Date June 26 . 2006
Signed Transition , ASME Program Engineer Date June 26 , COS
CERTIFICATE OF INSERVICE INSPECTION
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 <u>HSB-CT</u> of <u>Connecticut</u> have inspected the components described in this Owner's Report during the period <u>November 18,2004</u> to <u>May 10,2006</u> ,
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 Commissions MI 300762 National Board, Province and Endorsements Date July 06, 2006
Date
V V

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

								ITEM	26663		
1.	Owner	Cons	umers Energy Com	pany		Date		6/26/2006			
_			-	lame				_			
2.	Plant	Palis	ades Nuclear Power	Plant lame		Sheet	1	of	2		
		2778	ت Blue Star Highway 0		,		· ·	NO#26964			
				Idress		Repai	r Organiza	tion P.O. No., Job	No., etc		
3.	Work Pe	rforme				Type Code Sym	bol Stamp	N/A			
				ame Same		Authorization		N/A			
			Ad	dress		Expiration Date		N/A			
4.	Identific	ation o	of System PCS			Code Class		Class 1			
5.	(a) Appli	cable	Construction Code	ASME Section	<u> </u>	1977	Edition	1			
				Addenda n/a		Code Case n					
	(b) App	licable	Edition of Section	XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda			
	(c) App	licable	Section XI Code C	ases None		_					
6.	Identific	ation	of Components								
	Name o Compone	- 1	Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)		
	Tube Plu	gs	Westinghouse Electric Company	n/a	n/a	PO#1281	2005	Installed	No		
┝				<u> </u>							
				_							
-							-				
L									<u> </u>		
7	. Descri	ption	of Work P	lugged 10 tubes in	the "B" Steam G	enerator			J		
8	. Tests	condu	cted: H	ydrostatic	Pneumatic	Nominal Ope	erating Pre	ssure 🔽	Exempt [
			o	ther _	Pressure	psi	Test Te	emp	* F		
C	Other:								-		

ı' . Remarks	rem	2696 <u>4</u>
None		
		
	-	
		·
CERTIFICATE OF COMPLIANCE		
We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Co	da Si	ection YI
·	ue, oc	CHOIT XI.
Type Code Symbol Stamp N/A		
Certificate of Authorization No. N/A Expiration Date N/A		
Signed Machel W. Och ASME Program Engineer Date June 26		
Signed Michael W. Uela , 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 Press	ure V	'essel
Inspectors and the State or Province of Michigan		and employed
by HSB-CT of Connecticut	<u> </u>	ave inspected
the components described in this Owner's Report during the period November 18,2004 to M	<u>ay 10,</u>	2006,
and state that to the best of my knowledge and belief, the Owner has performed examinations a	nd ta	Ken corrective
measures described in this Owner's Report in accordance with the requirements of the ASME C	oae,	Section XI.
By signing this certificate neither the Inspector nor his employer makes any warranty, ex	nres	sed or implied
concerning the examinations and corrective measure described in the Owner's Report. F		
the Inspector nor his employer shall be liable in any manner for any personal injury of property d		
any kind arising from or connected with this inspection.		
Nega 1		
Inspector's Signature Commissions Mi 300762 National Board, Province and E		
Mi 300762 Inspector's Signature Commissions Mi 300762 National Board, Province and E	naors	ements
Date Sulumb 2006		

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

								ITEM	TITE EAST	
1.	Owner	Consumers Energ	y Comp	pany		Date		6/26/2006		
2.	Name . Plant Palisades Nuclear Power Plant					Sheet	1	of	2	
		27780 Blue Star I		ame Covert MI 4904	3			NO#20457		
				dress		Renai		tion P.O. No., Job	No etc	
3.	Work Pe	rformed by	Owner	uiess		_	-		NO., 610	
		•	Na	ame		Type Code Sym	boi Stamp			
			S	Same		Authorization		N/A N/A		
4.	Identific	ation of System	Add ESS	dress		Expiration Date Code Class		Class 2		
5.	(a) Appli	cable Construction	n Code	ASME B31.1	,	1955 Edition	Edition			
				Addenda n/a		Code Case n/a				
	(b) App	licable Edition of	Section	XI Utilized for Re	epair/Replaceme	ent Activity 1	989 With N	o Addenda		
	(c) Ann	licable Section XI	Code C	ases N-416-1		-				
_				ases		<u> </u>				
6.	Identific	ation of Compone	ents							
	Name o	1		Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)	
	CV-307	0 Aloyco	nc	68-M113-1	n/a	PO#4838	2006	Installed	No	
		İ					1			
_				····		<u></u>				
							1			
-					 		╂		 	
Γ										
Ļ					- D 00D	 	<u> </u>			
7	. Descri	ption of Work	Re	epiaced HPSI Pun	np P-668 Subcoo	ling valve CV-3070				
8	. Tests o	conducted:	Hy	ydrostatic 🗌	Pneumatic	Nominal Ope	rating Pre	ssure 🔽	Exempt	
			Of	ther 🗀	Pressure	psi	Test Te	emp.	° F	
C	Other: n/a	ì								

). 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
AVA
Certificate of Authorization No. N/A Expiration Date N/A
Signed Metal W. Och , 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 <u>Michigan</u> 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.
measures described in this Owner's Neport in accordance with the requirements of the Acivic Code, Occasin At.
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.
JBloke Commissions MI 300762
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Date

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

								ITEM	%(16]e]e(t		
1.	Owner	Cons	umers Energy Cor	mpany		Date		6/26/2006			
2.	Plant	Palisa	ades Nuclear Pow	Name er Plant		Sheet	1	of	2		
		2778	0 Blue Star Highwa	Name ay, Covert, MI 4904	3		V	/O#270650			
				Address		Repai	r Organiza	tion P.O. No., Job	No., etc		
3.	Work Per	forme	d by Owner	T		Type Code Sym	_		,		
				Name		Authorization	iboi stailip	N/A			
				Same		Expiration Date		N/A			
4.	ldentific:	ation o	A of System CS	ddress W		Code Class					
				· · · · · · · · · · · · · · · · · · ·			= 4141				
5.	(a) Appii	cable	Construction Cod	de ASME B31.1	· · ·	1955 Edition	Edition	ı			
				Addenda n/a	1	Code Case n	/a				
	(b) Appl	icable	Edition of Section	on XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda			
	(c) Appl	icable	Section XI Code	Cases N-416-1		-	.				
6.			of Components				-				
Γ				1	1				46115		
	Name of		Name of Manufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)		
	3" Weldol	et	Dubose	n/a	n/a	PO#5457	2006	Installed	No		
	3" Pipe C	ар	Dubose	n/a	n/a	PO#5457	2006	Installed	No		
Γ											
	·										
r		_									
\vdash		\dashv					 				
_	<u></u>		·				\vdash				
L							<u> </u>				
7	. Descri	otion o	of Work	Installed weldolet an	d cap on servive	water pipe					
8	. Tests o	onduc	cted:	Hydrostatic [Pneumatic	Nominal Ope	erating Pre	ssure 🗸	Exempt		
			(Other _	Pressure	psi	Test Te	emp.	°F		
c	Other: n/a	l									

). 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
In the 11 1 (e)
Signed Michael O. Och , ASME Program Engineer Date Vulve 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 of of Connecticut have inspected the components described in this Owner's Report during the period November 18,2004 to 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.
KSBlake Commissions MI 300762
Commissions MI 300762
Date
Date

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

								ITEM	46/866
1.	Owner	Consu	mers Energy Com	pany		Date		6/26/2006	
2.	Plant	Palisad	les Nuclear Powe	Name r Plant		Sheet	1	of	2
		27700		Name	<u> </u>			NO42E4EC	
		27760		y, Covert, MI 49043	· · · · · · · · · · · · · · · · · · ·			NO#25456	N14-
3.	Work Per	formed		ddress		_	-	tion P.O. No., Job	No., etc
				lame		Type Code Sym	bol Stamp		
				Same		Authorization		N/A	
				Idress	 	Expiration Date		N/A	
4.	Identifica	ation of	System PCS	i		Code Class		Class 1	
5.	(a) Appli	cable C	onstruction Cod	e ASME Serction	,	1989 Edition	Edition	1	
				Addenda n/a	ı	Code Case n	/a	_	
	(b) Appl	icable I	Edition of Section	n XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	lo Addenda	
	(c) Appl	icable S	Section XI Code	Cases None		_			
6.			Components						
	Name of Compone		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
	Helicoi		Westinghouse	n/a	n/a	PO# G0318552	n/a	Installed	No
Ļ									
7.	Descri	otion of	Work <u>F</u>	eplace stuck stud 8	k studs #10 OB a	and Stud #14 IB			
8.	Tests o	onduct	ed: H	lydrostatic 🔲	Pneumatic	Nominal Ope	erating Pre	ssure 🗸	Exempt
			c	Other _	Pressure I	NOP psi	Test Te	emp. NOT	° F
C	ther: n/a	l .							

. Remarks	ITEM 25:55
None	
CERTIFICATE OF COMPLIANCE	
We certify that the statements made in the report are correct and this conforms to the requirer	ments of the ASME Code, Section XI.
Type Code Symbol Stamp N/A	
Certificate of Authorization No. N/A Expiration Date N/A	4
1/2 = 1 1 1/4 1	27 27
Signed ////// , ASME Program Engineer Date 3	luve 27 , 2006
CERTIFICATE OF INSERVICE INSPECTION	1
OLIVIII IOATE OF INGLIVIOL ING. EGITOR	ı
I, the undersigned, holding a valid commission issued by the National Board o	of Roiler and Pressure Vessel
Inspectors and the State or Province of Michigan	and employed
by <u>HSB-CT</u> of <u>Connecticut</u> the components described in this Owner's Report during the period <u>November 1</u>	have inspected
and state that to the best of my knowledge and belief, the Owner has performe	ed examinations and taken corrective
measures described in this Owner's Report in accordance with the requirement	nts 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 O	wner's Report. Furthermore, neither
the Inspector nor his employer shall be liable in any manner for any personal in any kind arising from or connected with this inspection.	njury or property damage or a loss of
Inspector's Signature Commissions National Boar	MI 300762
Inspector's Signature Commissions National Board Date	u, i Tovinos ana Enasissimonio
Date	

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

						ITEM	3998E			
. Owner	Consumers Energy C	ompany		Date		6/26/2006				
. Plant	Palisades Nuclear Po	Name wer Plant		Sheet	1	of	2			
	27780 Blue Star High	Name vay, Covert, MI 49043			v	/O#269848				
		Address		Rep	air Organiza	tion P.O. No., Job	No., etc			
Work Pe	erformed by NWS	Technologies,LLC Name		Type Code Sy	mbol Stamp	VR / NR				
	131 Venture Bl	/d, Spartanburg,SC 29	301	Authorization	i	632 / 81				
		Address		Expiration Da	ite	4/3/2009 4/9/2	009			
Identific	cation of System M	ss ————		Code Class			Job No., etc 4/9/2009 ASME Code Stamped			
(a) Appl	icable Construction C	ode ASME Section I	u,	1968	Edition	ı	ASME Corrected, Code Removed, or Stamped			
		Addenda n/a		Code Case	— п/а					
/l= \ A					4000 1454- 41					
(b) App	olicable Edition of Sect	ion XI Utilized for Re	pair/Replaceme	ent Activity	1989 With N	o Addenda				
(c) App	olicable Section XI Cod	e Cases None								
Identific	cation of Components									
Name o		Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	Code			
RV-070	See Attached Form NVR-1	•	-	•	-	-	-			
		-					<u> </u>			
			<u> </u>		<u> </u>		<u> </u>			
7. Descri	iption of Work	Repaired Relief Valve	9							
8. Tests	conducted:	Hydrostatic	Pneumatic	Nominal O	perating Pre	ssure 🔽	Exempt			
		Other	Pressure	p:	si Test Te	emp.	° F			
Other:			_							

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 StampN/A
Certificate of Authorization No. N/A Expiration Date N/A
/h:11.61
Signed / McCh Will , ASME Program Engineer Date Tune ZC , 2006
CERTIFICATE OF INSERVICE INSPECTION
, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel
nspectors and the State or Province of <u>Michigan</u> and employed by <u>HSB-CT</u> have inspected
he 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
neasures 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
he 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.
KIBIA Commissions MI 200703
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Date

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

· · · · · · · · · · · · · · · · · · ·	NWS Technolo 31 Venture Boule	ogies, LLC evard, Spartanburg,		se Order#	00004610	·					
2. Work performed for: N	luclear Managem	ent Company - Palis	ades Nucle	ear Plant							
3/4. Owner - name, addre Nuclear Plant, 27780		•		uclear Man	agement Com	pany - Palisades					
 a: Repaired pressure r b: Name of manufacture c: Identifying nos. 	rer: Anderson G	lain Steam Safety Vaireenwood / Crosby	lve		· · · · · · · · · · · · · · · · · · ·						
*************************************	HA 55	RV-0703	n/a	steam	6Q8	n/a					
d: Construction Code:	(type) ASME Sec. III	(mfr's S/N) 1968	(NB#) n/		(size) n/a	(yr.built)					
	(name/section/divi		(adde	•	de Cases(s))	(Code Class)					
6. ASME Code Section XI	applicable for ins	service inspection:		989	n/a	n/a					
7. ASME Code Section XI	used for renairs	ranjacaments:		lition) 989	(addenda) n/a	(Code Case(s)) n/a					
7. ASML Code Gection A	used for repairs,	replacements.		lition)	(addenda)	(Code Case(s))					
8. Construction Code use	d for repairs, repla	acements:	•	968	n/a	n/a					
	- · · · · · · · · · · · · · · · · · · ·			lition)	(addenda)	(Code Case(s))					
9. Design responsibilities:	n/a		·								
10. Opening pressure: 10					· · · · · · · · · · · · · · · · · · ·						
Set-pressure adjustme		NWS Technologies	LLC	using_	steam						
11. Description of work (in	clude name and ident	tifying number of replaces	nent parts):	As-found	steam test. Dis	sassembled,					
inspected, modified gu											
spindle, lapped seats.	Certified set-pres	sure using steam. J	cked & La	pped. Certi	fied seat tightr	ness using					
steam.		<u> </u>			<u> </u>						
12. Remarks: NWS Trave	ler #: 06-127. Rep	laced spindie.									
		RTIFICATE OF CO									
I, Cesar V. Sierra						de in this					
		on or replacement of	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.										
			rd Inspecti	on Code "V	R" and "NR" r	ules.					
National Board Certificate of Authorization No. 81 to use the "NR" stamp expires April 9, 2009.											
. If . I	of Authorization Nof Authorization N	No. 632 to use	rd Inspecti the "VR"	on Code "V stamp expi	R" and "NR" rures April 3, res April 9,	ules. 2009. 2009.					
4/19/06 NWS Te	of Authorization Nof Authorization No Chnologies, LLC	No. 632 to use No. 81 to use Usaa	the "VR"	on Code "V stamp expi stamp expi	R" and "NR" rures April 3, res April 9,	ules. 2009. 2009. nager, QA					
4/19/06 NWS Te	of Authorization Nof Authorization Nohmber Notation Nohmber Chnologies, LLC epair Organization	No. 632 to use No. 81 to use Case Add	rd Inspecti e the "VR" e the "NR" horized repre	on Code "V stamp expi stamp expi sentative	R" and "NR" rures April 3, res April 9,	ules. 2009. 2009.					
Ulg/06 NWS Te	of Authorization Nof Authorization No Chnologies, LLC epair Organization	No. 632 to use t	rd Inspecti the "VR" the "NR" horized repre	on Code "V stamp expi stamp expi sentative	R" and "NR" rures April 3, res April 9, Mar	ules. 2009. 2009. nager, QA Title					
Ulglob NWS Te	of Authorization Nof Authorization Nof Authorization Notation CE	No. 632 to use No. 81 to use Cluber Additional Commission issue	rd Inspecti the "VR" the "NR" horized representation PECTION d by The N	on Code "V stamp expi stamp expi sentative	R" and "NR" res April 3, res April 9, Mar	ules. 2009. 2009. nager, QA Title					
I, Charles F. Toegel Vessel Inspectors and cert	of Authorization Nof Authorization Nof Authorization Notation Organization CE Jr. holding a valuificate of competer	No. 632 to use No. 81 to use Colored State C	rd Inspective the "VR" of the "NR" of the "NR" of the "NR" of the NR" of the	on Code "V stamp expi stamp expi sentative	R" and "NR" rures April 3, res April 9, Mar	ules. 2009. 2009. nager, QA Title nd Pressure					
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I, Charles F. Toegel. Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Boa	of Authorization Nof Authorization Nof Authorization Note that the control of Authorization of CE of CT in this report on replacement has ard Inspection Control of CO o	No. 632 to use No. 81 to use N	rd Inspective the "VR" of the "NR" of the "NR" of the NR" of the NR of the N	on Code "V stamp expi stamp expi sentative lational Boo f North have inspe the best of with Section	R" and "NR" research April 3, April 9, Mar ard of Boiler are Carolina and ected the repair my knowledge on XI of the of the second seco	ales. 2009. 2009. Title ad Pressure I employed ir, modification e and belief, the ASME					
I, Charles F. Toegel. Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Boa By signing this certificate,	of Authorization Nof Authorization Nof Authorization Not Chnologies, LLC epair Organization CE Ir. holding a valificate of competer of CT in this report on replacement has ard Inspection Conneither the unders	No. 632 to use No. 81 to use N	rd Inspective the "VR" ethe "NR" PECTION of by The Norisdiction of the CT that that to coordance es. yer makes	on Code "V stamp expi stamp expi sentative lational Boo f North have inspe the best of with Section	R" and "NR" research April 3, April 9, Mar ard of Boiler are Carolina and ected the repair my knowledge on XI of the of the arty, expressed	ules. 2009. 2009. nager, QA Title nd Pressure I employed ir, modification e and belief, the ASME or implied,					
I, Charles F. Toegel Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Boa By signing this certificate, in concerning this repair, modification, modification or concerning this repair, modification, modification or concerning this repair, modification, modification or concerning this repair, modification, modification or concerning this repair, his repair this repair this repair this repair this repair this repair this repair this repair this re	of Authorization Nof Authorization Nof Authorization Notation CE apair Organization CE Ir. holding a validificate of competer of CT in this report on a replacement has and Inspection Coenither the undersidification or replacement diffication or replacement of the undersidification or replacement or replacement the undersidification or replacement o	RTIFICATE OF INS lid commission issues ency issued by the junt of Hartfe and sheen completed in a de "VR" and "NR" rusigned nor my employement described in	rd Inspective the "VR" the "NR" horized representation of the Nation of	on Code "V stamp expi stamp expi sentative lational Boo of North have inspe the best of with Section any warrar Furthermo	R" and "NR" research April 3, res April 9, Mar April 9, M	ules. 2009. 2009. nager, QA Title nd Pressure I employed ir, modification a and belief, the ASME or implied, undersigned					
I, Charles F. Toegel. Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Boa By signing this certificate,	of Authorization Nof Authorization Nof Authorization Not Chnologies, LLC epair Organization CE Ir. holding a valificate of competer of CT in this report on replacement has and Inspection Comeither the undersidification or replaciable in any manning of Authorization Not Inspection Not	RTIFICATE OF INStilled commission issued by the junction of Hartford and seen completed in a de "VR" and "NR" rusigned nor my employment described in ler for any personal in the second of the second	rd Inspective the "VR" the "NR" horized representation of the Nation of	on Code "V stamp expi stamp expi sentative lational Boo of North have inspe the best of with Section any warrar Furthermo	R" and "NR" research April 3, res April 9, Mar April 9, M	ules. 2009. 2009. nager, QA Title nd Pressure I employed ir, modification a and belief, the ASME or implied, undersigned					
I, Charles F. Toegel. Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Boa By signing this certificate, in concerning this repair, modification or my employer shall be it	of Authorization Nof Authorization Nof Authorization Not Chnologies, LLC epair Organization CE Ir. holding a valificate of competer of CT in this report on replacement has and Inspection Comeither the undersidification or replaciable in any manning of Authorization Not Inspection Not	RTIFICATE OF INStilled commission issued by the junction of Hartford and seen completed in a de "VR" and "NR" rusigned nor my employment described in ler for any personal in the second of the second	rd Inspective the "VR" the "NR" horized representation of the Nation of	on Code "V stamp expi stamp expi sentative lational Boo of North have inspe the best of with Section any warrar Furthermo	R" and "NR" research April 3, res April 9, Mar April 9, M	ules. 2009. 2009. nager, QA Title nd Pressure I employed ir, modification a and belief, the ASME or implied, undersigned					

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

							11(2)(1)	A.F.(close)
1.	Owner	Consumers Energy Co	ompany		Date		6/26/2006	
2.	Name Plant Palisades Nuclear Power Plant				Sheet	1	of	2
		27780 Blue Star High	Name way, Covert, MI 49043	3		w	O#269853	
			Address		Repai	ir Organizat	ion P.O. No., Job	No., etc
3.	Work Per	formed by NWS	Technologies,LLC		Type Code Syn	nbol Stamp	VR/NR	
		131 Venture Ph	Name vd, Spartanburg,SC 29	2201	Authorization		632 / 81	
			Address		Expiration Date	3	4/3/2009 4/9/2	009
t .	Identifica		SS		Code Class			
5.	(a) Appli	cable Construction Co	ode ASME Section	<u> </u>	1968	Edition		
			Addenda n/a	1	Code Case r	n/a		
	(b) Anni	icable Edition of Sect	ion XI Utilized for Re	nair/Reniacem	ent Activity 1	1989 With No	o Addenda	
				panneplacem	-	-	- Addenda	
	(c) Appl	icable Section XI Cod	le Cases None		_			
6.	Identific	ation of Components						
	Name of Compone		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	-	•	-	-	-	-
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_						 -		
				· · · · · · · · · · · · · · · · · · ·		+	 	
							<u>:</u>	
7	. Descri	otion of Work	Repaired Relief Valv	е				
8	. Tests o	onducted:	Hydrostatic	Pneumatic	Nominal Op	erating Pres	ssure 🗸	Exempt
			Other _	Pressure	psi	Test Te	mp.	°F
C	Other:						<u> </u>	

. 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 Mull Och , ASME Program Engineer Date June 26 , 2006
Signed Types Of , ASIME Program Engineer Date 3002 25 , 2006
CERTIFICATE OF INSERVICE INSPECTION
l, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel
Inspectors and the State or Province of <u>Michigan</u> and employed
byofonnecticut 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.
Selection Commissions
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Date
· · · · · · · · · · · · · · · · · · ·

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

1. Work performed by:		logies, LLC levard, Spartanburg.			00004610	
2. Work performed for:	Nuclear Manager	ment Company - Palis	ades Nucl	ear Plant		
3/4. Owner - name, ad Nuclear Plant, 277		ation of nuclear power orial Hwy, Covert, MI		luclear Mar	nagement Com	ipany - Palisades
a: Repaired pressureb: Name of manufactionc: Identifying nos.		Main Steam Safety Vo Greenwood / Crosby	ilve			
	HA 55	RV-0705	n/a	steam	6Q8_	n/a
d: Construction Cod	(type) le: ASME Sec. III (name/section/di			(service). <u>/a</u> enda) (Co	(size) n/a xde Cases(s))	(yr.built) 1 (Code Class)
6. ASME Code Section	•		•	1989	n/a	n/a
7. ASME Code Section	• •	•	(e	dition) 1989	(addenda)	(Code Case(s)) n/a
8. Construction Code u	•	•	-	dition) 968	(addenda) n/a	(Code Case(s)) n/a
			(e	dition)	(addenda)	(Code Case(s))
9. Design responsibilitie	es: <u>n/a</u>			. 		
10. Opening pressure: Set-pressure adjust		NWS Technologies	, LLC	using	steam	
	guide and upper s	ntifying number of replace pring washer per Pali essure using steam. J	ades Mod	dification E/	\R-2005-0043,	replaced
steam.	is. Cermied set-pre	ssure using steam. J	ickeu a La	apped. Cen	med Seat ugnu	iless using
12. Remarks: NWS Tra	veler#: 06-128. Re	eplaced spindle.				
	C	ERTIFICATE OF CO	MPLIANC	E		
I, Cesar V. Sierr		to the best of my know				
report are correct and to conforms to Section XI						
National Board Certifica				stamp expi		
National Board Certifica				stamp exp		
4/19/Cb NWS	Technologies, LL	 /	15			nager, QA
Date	Repair Organization		horized repr	esentative	10.0.	Title
		ERTIFICATE OF INS	PECTION	/	 	
I, Charles F. Toege	el Jr. holding a v	alid commission issue	d by The I	National Bo	ard of Boiler a	nd Pressure
Vessel Inspectors and o					Carolina and	
by Hartford Steam Bo		of Hartfo				ir, modification
or replacement describe						
this repair, modification				with Section	on Al of the of	INE ASME
Code and the National By signing this certificate				any warra	nty everessed	l or implied
concerning this repair, n						
nor my employer shall b	e liable in any man	ner for any personal i	•			_
arising from or connecte	d with this inspecti	og.				.
4/14/3004 Y	charles F	signature /		2, A, N, I	NC# 1073	sdiction.& no.)
	pootons t			, , , , , , , ,		

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

								ITEM	267/5(31)
1.	1. Owner Consumers Energy Company					Date		6/26/2006	
2.	Name . Plant Palisades Nuclear Power Plant					Sheet	1	of	2
		27780 Blue Star	-	lame /, Covert, MI 4904	3	-	W	/O#267581	
			Ac	idress		Repai	ir Organizat	ion P.O. No., Job	No., etc
3.	Work Per	formed by		echnologies,LLC		Type Code Sym	nbol Stamp	VR/NR	
	Name 131 Venture Blvd, Spartanburg,SC 29301					Authorization		632 / 81	
		- ISI VEIIU		dress		Expiration Date	•	4/3/2009 4/9/20	009
4.	Identific	ation of System	MSS			Code Class			
5.	(a) Appli	cable Construction	on Code	ASME Section	<u>m</u> ,	1968	Edition		
				Addenda n/a	3	Code Case r	n/a		
	(b) App	icable Edition of	Section	 XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda	
	(c) App	icable Section XI	Code C	Cases None		•			
6.		ation of Compone							
	Name o			Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	RV-070	See Attac Form NV		-		-		-	-
<u> </u>				_					
Γ									
-									
-					 		-		
L			-		 				
7	. Descri	otion of Work	R	epaired Relief Valv	re				
8	. Tests o	onducted:	н	ydrostatic	Pneumatic	Nominal Op	erating Pre	ssure 🗸	Exempt
			0	ther _	Pressure	psi	Test Te	mp.	° F
(Other:				_				

IT Remarks	EM 207/581
See Attached Form NVR-1 for RV-0706	
OFFICIAL OF COMPLIANCE	 -
CERTIFICATE OF COMPLIANCE	a Castian VI
We certify that the statements made in the report are correct and this conforms to the requirements of the ASME Cod	e, Section XI.
Type Code Symbol Stamp	
Certificate of Authorization No. N/A Expiration Date N/A	
Signed Mahel W. Ch. ASME Program Engineer Date June 26	2006
CERTIFICATE OF INSERVICE INSPECTION	
DEITH IONE OF MODITION	
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressu	re Vessel
nspectors and the State or Province of <u>Michigan</u>	and employed
by HSB-CT of Connecticut	have inspected
the components described in this Owner's Report during the period <u>November 18,2004</u> to <u>Ma</u> and state that to the best of my knowledge and belief, the Owner has performed examinations an	
measures described in this Owner's Report in accordance with the requirements of the ASME Co	
Dy circuing this contificate neither the Inspector per his employer makes any warranty eve	record or implied
By signing this certificate neither the Inspector nor his employer makes any warranty, exp concerning the examinations and corrective measure described in the Owner's Report. Fu	
the Inspector nor his employer shall be liable in any manner for any personal injury of property da	
any kind arising from or connected with this inspection.	
LIBIAL Commissions MI 300762	
Inspector's Signature Commissions MI 300762 National Board, Province and En	dorsements
Date	

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 Plant, 27780 Blue Star Memorial Hwy, Covert, MI 49043							
	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					
	d: Construction Code: ASME Sec. III 1968 n/a n/a (name/section/division) (edition) (addenda) (Code Cases(s))	(yr.built) 1 (Code Class)					
	6. ASME Code Section XI applicable for inservice inspection: 1989 n/a	n/a					
	7. ASME Code Section XI used for repairs, replacements: 1989 n/a	(Code Case(s))					
	8. Construction Code used for repairs, replacements: (edition) (addenda) n/a	(Code Case(s)) n/a					
	(edition) (addenda)	(Code Case(s))					
	9. Design responsibilities: <u>n/a</u>						
\ 2	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 . Discinspected, modified guide and upper spring washer per Palisades Modification EAR-2005-0043, I seats. Certified set-pressure and seat tightness using steam.						
	12. Remarks: NWS Traveler #: 06-129.						
	Date Repair Organization Authorized representative	l above les. 2009.					
ı	CERTIFICATE OF INSPECTION Charles E. Toegel, Ir., holding a valid commission issued by The National Board of Boiler and	d Pressure					
	I, <u>Charles F. Toegel Jr.</u> holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and certificate of competency issued by the jurisdiction of <u>North Carolina</u> and employed by <u>Hartford Steam Boiler of CT</u> of <u>Hartford, CT</u> have inspected the repair, modification or replacement described in this report on <u>HIPIDO</u> 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 MB # 8462, A, N, I NC# 1073 Date Inspectors Signature Commissions (NB (incl endorsements), juriscents)	· ·					

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

							ITEM	105810
1.	Owner	Consumers Energy C	ompany		Date		6/26/2006	
2.	Plant	Palisades Nuclear Po	Name wer Plant		Sheet	1	of	2
		27780 Blue Star High	Name way, Covert, MI 4904	3		W	/O#269856	
			Address		Repai	r Organizat	tion P.O. No., Job	No., etc
3.	Work Pe	rformed by NWS	S Technologies,LLC		Type Code Sym	bol Stamp	VR / NR	
		131 Venture Bi	Name vd, Spartanburg,SC 29	9301	Authorization		632 / 81	
			Address		Expiration Date	•	4/3/2009 4/9/20	009
4.	Identific	ation of System M	ISS		Code Class			
5.	(a) Appli	cable Construction C	ode ASME Section	,	1968	Edition		
			Addenda n/a	3	Code Case n	/a		
	(b) App	licable Edition of Sec	tion XI Utilized for Re	pair/Replaceme	ent Activity 1	989 With N	o Addenda	
	(c) App	licable Section XI Coc	le Cases None					
6.	Identific	ation of Components						
	Name o		Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	RV-070	7 See Attached Form NVR-1	-	-	<u>.</u>	-	-	-
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L				 		 - -		
7	. Descri	ption of Work	Repaired Relief Valv	/e		-		
8	. Tests	conducted:	Hydrostatic	Pneumatic	Nominal Ope	erating Pre	ssure 🔽	Exempt
			Other	Pressure	psi	Test Te	emp.	°F
(Other:			_	<u> </u>			

. 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 StampN/A
Certificate of Authorization No. N/A Expiration Date N/A
Mat Call Call
Signed Muchael W. Cleha , ASME Program Engineer Date True ZC , 2005
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.
Description of the season of t
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.
1.8BQ Q
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements Date
Date
U V

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

		logies, LLC evard, Spartanburg,			#_00004610	
2. Work performed for: N	luclear Managen	nent Company - Palis	ades Nu	clear Plant		
3/4. Owner - name, addre Nuclear Plant, 27780				Nuclear Ma	nagement Com	npany - Palisade:
5. a: Repaired pressure r b: Name of manufacture: Identifying nos.		Main Steam Safety V Greenwood / Crosby	alve			
	HA 55	RV-0707	_n/a	steam		n/a
d: Construction Code:	(type) ASME Sec. III (name/section/div			(service n/a denda) (0). (size) n/a Code Cases(s))	(yr.built) 1 (Code Class)
C ACME Code Cooker Vi	•	•	(ac	•		•
6. ASME Code Section XI	applicable for in	service inspection:		1989 (edition)	n/a (addenda)	n/a (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	d for repairs, repl	lacements:		1968	n/a	n/a
4 4444			•	(edition)	(addenda)	(Code Case(s))
9. Design responsibilities:	n/a					
10. Opening pressure: 10. Set-pressure adjustme		NWS Technologie	s, LLC	using	steam_	
11. Description of work (In	nclude name and ider	ntifying number of replace	ment parts)	: Disasse	mbled, inspecte	d, modified
guide and upper spring					ed seats. Certif	fied set-
pressure using steam.	Jacked & Lappe	ed. Certified seat tight	ness usi	ng steam.		
12. Remarks: NWS Travel						
12. Itemarks. Ittio Hate	ler#: 06-130.					
12. Itemaris. Ittio Have	C	ERTIFICATE OF CO				
I, Cesar V. Sierra	Ci certify that t	to the best of my know	wledge a	nd belief the		
I, Cesar V. Sierra report are correct and the	CE certify that t repair, modification	to the best of my kno- on or replacement of	wledge a	nd belief the sure relief d	evices describe	d above
I, Cesar V. Sierra report are correct and the conforms to Section XI of the conformation X	certify that trepair, modification	to the best of my kno on or replacement of and the National Boa	wledge a the pres rd Inspec	nd belief the sure relief d ction Code "	evices describe VR" and "NR" r	d above ules.
I, Cesar V. Sierra report are correct and the	certify that trepair, modification the ASME Code of Authorization	to the best of my known on or replacement of and the National Boardon. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	wiedge a the presend inspec- the "VR	nd belief the sure relief d	evices describe VR" and "NR" r pires April 3,	ed above ules. 2009.
report are correct and the conforms to Section XI of National Board Certificate National Board Certificate	certify that trepair, modification the ASME Code of Authorization for Authorization	to the best of my known on or replacement of and the National Boa No. 632 to us No. 81 to us	wiedge at the present inspec- the "VR the "NI"	nd belief the sure relief d stion Code " " stamp ex	evices describe VR" and "NR" r pires April 3, pires April 9,	d above ules. 2009. 2009.
report are correct and the conforms to Section XI of National Board Certificate National Board Certificate 4/19/06 NWS Terminate	certify that trepair, modification the ASME Code of Authorization	to the best of my known on or replacement of and the National Boa No. 632 to us No. 81 to us	wledge at the present Inspect the "VR the the "NA	nd belief the sure relief d stion Code " " stamp ex	evices describe VR" and "NR" r pires April 3, pires April 9,	ed above ules. 2009.
report are correct and the conforms to Section XI of National Board Certificate National Board Certificate 4/19/06 NWS Terminate	certify that to repair, modification the ASME Code of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization	to the best of my known on or replacement of and the National Boa No. 632 to us No. 81 to us	wledge at the present inspect the "VR the the "NR without the present in the present the present in the present	nd belief the sure relief of ction Code " " stamp ex " stamp ex " stamp ex " cresentative	evices describe VR" and "NR" r pires April 3, pires April 9,	ed above ules. 2009. 2009. nager, QA
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report are correct and the conforms to Section XI of National Board Certificate National Board Certificate National Board Certificate National Board Certificate National Board Certificate NWS Terest National Research	certify that to repair, modification the ASME Code of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Compair Organization of Competition of	to the best of my known on or replacement of and the National Board No. 632 to us No. 81 to us Cartificate OF INStallid commission issues tency issued by the justice of the state of the s	Medge at the press rd Inspect the "VF the the "NF thorized rep EPECTIO d by The insdiction	nd belief the sure relief of the street relief of the street relief of the street relief of the street relief of the street relief of the street relief of the street relief reli	evices describe VR" and "NR" r pires April 3, pires April 9, Mar oard of Boiler and h Carolina and	ed above ules. 2009. 2009. nager, QA Title nd Pressure d employed
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report are correct and the conforms to Section XI of National Board Certificate National Board Certificate National Board Certificate National Board Certificate NWS Terest Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Board By signing this certificate, in	certify that to repair, modification the ASME Code of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Compair Organization of CT in this report on replacement has and Inspection Conneither the under	to the best of my known on or replacement of and the National Board No. 632 to us No. 81 to us Commission issues tency issued by the justice of Hartford And State of WR" and "NR" russigned nor my employed in a signed in a sign	wledge at the present Inspect the the "VF the the "NF thorized rep EPECTIO d by The urisdiction ord, CT tate that accordance les. yer make	nd belief the sure relief of the cition Code " stamp ex	evices describe VR" and "NR" r pires April 3, pires April 9, Mar card of Boiler and pected the repa of my knowledg tion XI of the of anty, expressed	ed above sules. 2009. 2009. nager, QA Title nd Pressure demployed ir, modification e and belief, the ASME I or implied,
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report are correct and the conforms to Section XI of National Board Certificate National Board Certificate National Board Certificate National Board Certificate National Board Certificate NWS Terms I, Charles F. Toegel NWS Terms Vessel Inspectors and cert by Hartford Steam Boile or replacement described this repair, modification or Code and the National Board Sy signing this certificate, it concerning this repair, modification or my employer shall be like the conformal state of the concerning this repair, modification or my employer shall be like the conformal state of the conformal s	certify that to repair, modification the ASME Code of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Compair Organization Consider the under th	to the best of my known on or replacement of and the National Boardon No. 632 to us No. 81 to us Commission issued and some completed in a code "VR" and "NR" runsigned nor my employment described in ner for any personal in the control of the complete of	Medge at the present Inspecte the "VR the "No Control of the "No Control of the Institution of the Instituti	nd belief the sure relief of ction Code " stamp ex " stamp ex " stamp ex " stamp ex " National B of Northave instee with Secretary warrat. Furtherm	evices describe VR" and "NR" r pires April 3, pires April 9, Mar oard of Boiler ar h Carolina and pected the repa of my knowledg tion XI of the of anty, expressed tore, neither the	ad above ules. 2009. 2009. nager, QA Title Title and Pressure demployed ir, modification e and belief, the ASME or implied, undersigned
report are correct and the conforms to Section XI of National Board Certificate National Board Certificate National Board Certificate National Board Certificate NWS Terms of	certify that to repair, modification the ASME Code of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Authorization of Compair Organization Consider the under th	to the best of my known on or replacement of and the National Boardon No. 632 to us No. 81 to us Commission issued and some completed in a code "VR" and "NR" runsigned nor my employment described in ner for any personal in the control of the complete of	Medge at the press of Inspect the "VR the "No Inspect to the "No Inspect to the "No Inspect to the "No Inspect to the "No Inspect to the "No Inspect to the	nd belief the sure relief of ction Code " stamp ex " stamp ex " stamp ex " stamp ex " National B of Northave instee with Secretary warrat. Furtherm	evices describe VR" and "NR" r pires April 3, pires April 9, Mar oard of Boiler ar h Carolina and pected the repa of my knowledg tion XI of the of anty, expressed tore, neither the tige or loss of ar	ad above ules. 2009. 2009. nager, QA Title Title and Pressure demployed ir, modification e and belief, the ASME or implied, undersigned

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

							ITEM	1961:61/
1.	Owner	Consumers Energy C	Company		Date		6/26/2006	
2.	Plant	Palisades Nuclear Po	Name ower Plant		Sheet	1	of	2
		27780 Blue Star High	Name hway, Covert, MI 490	143		w	/O#269857	
			Address		Repa	ir Organizat	ion P.O. No., Job	No., etc
3.	Work Pe	rformed by NW	/S Technologies,LLC	 	Type Code Syr	_		•
		131 Venture B	Name Blvd, Spartanburg,SC	29301	Authorization		632 / 81	
		101 VCIRGIO D	Address		Expiration Dat	ė	4/3/2009 4/9/20	009
4.	Identific	ation of System	MSS		Code Class			
5.	(a) Appli	cable Construction (Code ASME Section	on III ,	1968	Edition		
			Addenda	n/a	Code Case	n/a		
	(b) App	licable Edition of Sec	tion XI Utilized for	Repair/Replacem	ent Activity	1989 With No	o Addenda	
					-			
		licable Section XI Co	ue Cases					
6. —	Identific	ation of Components	s 					
	Name o Compone		Manufacturei r Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	RV-071	5 See Attached Form NVR-1		-	-	- 1	-	-
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						1 1		
\vdash			- 			 -		
L			L			<u> </u>		
7	'. Descri	ption of Work	Repaired Relief Va	alve				
8	i. Tests	conducted:	Hydrostatic	Pneumatic	Nominal Op	erating Pre	ssure 🔽	Exempt
			Other _	Pressure	psi	Test Te	mp.	°F
(Other:							

ITEM 2598	
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	ı XI.
Type Code Symbol Stamp N/A	
Certificate of Authorization No. N/A Expiration Date N/A	
Signed Michel W. Och , ASME Program Engineer Date Tune 2C , 20	<u>ه د</u>
CERTIFICATE OF INCERVICE INCRECTION	
CERTIFICATE OF INSERVICE INSPECTION	
I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vess	ol.
	employed
by <u>HSB-CT</u> of <u>Connecticut</u> have the components described in this Owner's Report during the period <u>November 18,2004</u> to <u>May 10,2006</u>	inspected
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, Sec	tion 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. Furthermo	re, neither
the Inspector nor his employer shall be liable in any manner for any personal injury of property damage o any kind arising from or connected with this inspection.	r a loss of
Inspector's Signature Commissions Mil 300762 National Roard Province and Endorsom	onto
Inspector's Signature Date LGB loke Commissions MI 300762 National Board, Province and Endorsement Date	51113
Date	

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

1. Work performed by:		logies, LLC evard, Spartanburg,		rchase Or 306	der# <u>0</u>	0004610			
2. Work performed for: 1	Nuclear Manager	nent Company - Pali	sades M	luclear Pla	int				
3/4. Owner - name, addre Nuclear Plant, 27780					Manag	ement Com	pany - Palisade		
5. a: Repaired pressure in b: Name of manufacture: Identifying nos.		Main Steam Safety V Greenwood / Crosby							
	HA 55	RV-0715	n/a	ste	am	6Q8	n/a		
	(type)	(mfr's S/N)	(NB#	•	rice).	(size)	(yr.built)		
d: Construction Code:	ASME Sec. III	1968		n/a		n/a	1		
	(name/section/div	, , , , , , , , , , , , , , , , , , , ,) (addenda)	(Code	Cases(s))	(Code Class)		
6. ASME Code Section XI	l applicable for in	service inspection:		1989		n/a	n/a		
7 4045 0-4- 0-4- V				(edition)	(8	addenda)	(Code Case(s))		
7. ASME Code Section XI	used for repairs	, replacements:	_	1989		<u>n/a</u> .	n/a		
8. Construction Code use	d for renairs, reni	lacements:		(edition) 1 968	(a	iddenda) n/a	(Code Case(s)) n/a		
o. Consudencial Code ase	a for repairs, rep	accincing.	_	(edition)		iddenda)	(Code Case(s))		
9. Design responsibilities:	nla			(**************************************	•	,	(0000 000(-))		
•						······	 		
10. Opening pressure: 1 Set-pressure adjustme		NWS Technologie	s, LLC	us	sing	steam_			
11. Description of work (ir inspected, modified gu									
seats. Certified set-pro	seats. Certified set-pressure using steam. Jacked & Lapped. Certified seat tightness using steam.								
		·				· · · · · · · · · · · · · · · · · · ·			
12. Remarks: NWS Trave	ler #: 06-131.								
		ERTIFICATE OF CO							
I, Cesar V. Sierra	<u> </u>	to the best of my kno							
report are correct and the									
conforms to Section XI of National Board Certificate				/R" stamp					
National Board Certificate				VR" stamp					
// /			A F		CAP.IOC				
	chnologies, LLC epair Organization			representativ	<u> </u>	<u> Mar</u>	nager, QA Title		
			/,						
I, Charles F. Toegel		ERTIFICATE OF IN			l Board	I of Boiler ar	d Proceure		
Vessel Inspectors and cert						rolina and			
by Hartford Steam Boile		of Harti					r, modification		
or replacement described									
this repair, modification or									
Code and the National Boa									
By signing this certificate,									
concerning this repair, mod									
nor my employer shall be i	•	• •	injury, t	property da	ımage o	or loss of an	y kina		
arising from or connected	would this inspection								
4/19/2006 /01	aslesoFo	weth		8462, A, I		NC# 1073			
Date 4	Interectors S	ignature \/	Commi	ssions (NB (i	nd endo	rsements), juri:	sdiction,& no.)		

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

							ITEM	Z68V/9
1.	Owner	Consumers Energy C	ompany		Date		6/26/2006	
2.	Plant	Palisades Nuclear Po	Name wer Plant		Sheet	1	of	2
		27780 Blue Star High	Name way, Covert, MI 490	43		w	/O#26379	
			Address		Repai	r Organizati	on P.O. No., Job	No., etc
3.	Work Per	formed by NWS	S Technologies,LLC		Type Code Syn	shol Stamp	VR / NR	
		121 Vantura Pl	Name vd, Spartanburg,SC 2	20204	Authorization		632 / 81	
		131 Venture Bi	Address	29301	Expiration Date	•	4/3/2009 4/9/2	009
4.	Identific	ation of System M	ISS		Code Class			······································
5.	(a) Appli	cable Construction C	ode ASME Section	n III ,	1968	Edition		
			Addenda n	/a	Code Case n	ı/a		
	(b) App	icable Edition of Sec	– tion XI Utilized for R	epair/Replacem	ent Activity 1	989 With No	Addenda	
			••		_			
		icable Section XI Cod						
6.	Identific	ation of Components						
	Name of	•	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	RV-071	See Attached Form NVR-1		•	-	-	-	-
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\vdash						-	-,	
L								
<u>_</u>	. Descri	otion of Work	Repaired Relief Va	lve	<u>-</u>			
8	3. Tests o	onducted:	Hydrostatic	Pneumatic	Nominal Op	erating Pres	sure 🗸	Exempt
			Other _	Pressure	psi	Test Ter	np.	°F
•	Other:	_						

Remarks ITEM 266761
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
1 1 0 1. (i)
Signed Medal V. Uch , ASME Program Engineer Date Tone 26 , 2000
CERTIFICATE OF INSERVICE INSPECTION
CENTIFICATE OF INCENTION LOTTON
O and the Control of the Control of the Control of the Control of Decision and Deci
, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel nspectors and the State or Province of <u>Michigan</u> and employe
by HSB-CT of Connecticut have inspected have inspected.
he 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 correcti
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 implie
concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neith
he Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss
any kind arising from or connected with this inspection.
ISBO O
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's dignature industrial
Date

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

1. Work performed by:	NWS Techno 131 Venture Bou	logies, LLC levard, Spartanburg		hase Order : 06	# 00004610				
2. Work performed for:	Nuclear Manager	ment Company - Pali	sades Nu	clear Plant					
3/4. Owner - name, add Nuclear Plant, 2778		ation of nuclear powe orial Hwy, Covert, M		Nuclear Ma	nagement Com	pany - Palisades			
5. a: Repaired pressureb: Name of manufactc: Identifying nos.	turer: Anderson								
	HA 55	RV-0716	<u>n/a</u>	steam	6Q8_	n/a			
d: Construction Code	(type) E: ASME Sec. III (name/section/di			(service) n/a denda) (C	(size) n/a ode Cases(s))	(yr.built) 1 (Code Class)			
6. ASME Code Section	XI applicable for ir	nservice inspection:		1989	n/a	n/a			
7. ASME Code Section 2	XI used for repairs	s, replacements:		(edition) 1989	(addenda) n/a	(Code Case(s)) n/a			
8. Construction Code us	ed for repairs, rep	lacements:	((edition) 1968	(addenda) n/a	(Code Case(s)) n/a			
0. 001104104011 0000 00				(edition)	(addenda)	(Code Case(s))			
9. Design responsibilities	s: <u>n/a</u>					<u> </u>			
10. Opening pressure: Set-pressure adjustr		NWS Technologie	s, LLC	using	steam				
guide and upper spr	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 Trav	eler#: 06-132. R	eplaced disc.							
		ERTIFICATE OF CO							
I, Cesar V. Sierra		to the best of my kno							
report are correct and the conforms to Section XI of									
National Board Certificat			•	" stamp exp					
National Board Certificat				tamp exp					
4/20/06 NWS T	echnologies, LL	c = //c	/		Mar	nager, QA			
	Repair Organization		thorized rep	presentative	14161	Title			
	C	ERTIFICATE OF IN	SPERTIO	N					
I, Carl R. Enos	holding a va	alid commission issu	ed by The	National Bo	ard of Boiler ar	nd Pressure			
Vessel Inspectors and ce	rtificate of compe	tency issued by the j	urisdiction	of <u>Ten</u>	nessee and	i employed			
by Hartford Steam Boi		of <u>Hart</u>			ected the repai				
or replacement described		4/20/06 and							
this repair, modification of	•	_		e with Section	on XI of the of t	he ASME			
Code and the National Bo						an inamita d			
By signing this certificate			•	•	• •				
concerning this repair, monor my employer shall be	•		•			_			
arising from or connected	•	• •	J + · •	. • •	-				
4/20/06 (Jarl R. E	mor		60, A, N, I	TN# 2236				
Date	Inspector's S	ignature	Commissi	ons (NB (incl e	ndorsements), juris	sdiction,& no.)			

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

								ITEM	269:66i
1.	Owner	Consumer	rs Energy Com	pany		Date		6/26/2006	
2.	Plant	Palisades	Nuclear Powe	Name r Plant		Sheet	1	of	2
		27780 Blu		Name y, Covert, MI 4904	3		w	/O#269863	
		-		ddress		Repa	ir Organizat	ion P.O. No., Job	No., etc
3.	Work Pe	rformed by	NWS T	echnologies,LLC		Type Code Syr	_		
		404	-	Name Spartanburg,SC 2	0204	Authorization	iiboi ottiiip	632 / 81	
			<u>. </u>	dress	9301	Expiration Dat	e	4/3/2009 4/9/20	009
4.	Identific	ation of Sy				Code Class		Class 2	
5.	(a) Appl	icable Cons	struction Cod	e ASME Section	m ,	1968	Edition		
				Addenda n/a	a	Code Case	n/a		
	(b) App	licable Edit	tion of Sectio	n XI Utilized for Re	epair/Replaceme	ent Activity	1989 With N	o Addenda	
	(c) App	licable Sec	tion XI Code	Cases None		•		· · · · · ·	
6.		ation of Co							
	Name o		Name of unufacturer	Manufacturer Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
	RV-072		ee Attached orm NVR-1	-	-	-	-	-	-
Г									
┞		_							
┢							1		
_							+-+		
L									
L									
7	. Descri	ption of We	ork <u>F</u>	Repaired Relief Val	/e	·		···	
8	. Tests	conducted:	- -	lydrostatic 🗌	Pneumatic	Nominal Op	erating Pres	ssure 🗸	Exempt
			C	Other _	Pressure	psi	Test Te	mp.	° F
(Other:								

ITEM 25935
Remarks See Attached Form NVR-1 for RV-0721
See Attached Form (447-1 to 174-072)
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 Marked & Och ASME Program Engineer Date July 26 2006
Signed Michael W. Och , ASME Program Engineer Date June 26 , 2006
CERTIFICATE OF INSERVICE INSPECTION
CERTIFICATE OF INSERVICE INSPECTION
, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel
nspectors and the State or Province of <u>Michigan</u> and employed op <u>HSB-CT</u> and employed have inspecte
byhsb-ct ofof <u>Connecticut</u> have inspecte he components described in this Owner's Report during the period November 18,2004 to to,
and state that to the best of my knowledge and belief, the Owner has performed examinations and taken correctiv
measures described in this Owner's Report in accordance with the requirements of the ASME Code, Section XI.
The standard this continued a neither the Increator ner big amployer makes any warranty evarcated or implie
By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implie- concerning the examinations and corrective measure described in the Owner's Report. Furthermore, neithe
the Inspector nor his employer shall be liable in any manner for any personal injury of property damage or a loss o
any kind arising from or connected with this inspection.
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements Date
Date

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

1. Work performed by:	NWS Techno	ologies, LLC ulevard, Spartanburg		ase Order #	00004610	
2. Work performed for:	Nuclear Manage	ment Company - Pal	isades Nucl	ear Plant		
3/4. Owner - name, add Nuclear Plant, 2778		ation of nuclear power		luclear Man	agement Com	pany - Palis
 a: Repaired pressure b: Name of manufact c: Identifying nos. 		Main Steam Safety \ Greenwood / Crosby				-
	HA 55	RV-0721	_n/a_	steam	6Q8	n/
	(type)	(mfr's S/N)	(NB#)	(service)	(size)	(yr.b
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6. ASME Code Section	XI applicable for in	nservice inspection:	1	989	n/a	n/a
			•	dition)	(addenda)	(Code Case
7. ASME Code Section	XI used for repair	s, replacements:		1989	<u>n/a</u> .	n/a
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9. Design responsibilitie	s: <u>n/a</u>	· · · · · · · · · · · · · · · · · · ·				
10. Opening pressure: Set-pressure adjusti		NWS Technologic	es, LLC	using	steam	
	s. Certified set-pro	spring washer per Pa essure using steam. Replaced spindle.				
		ERTIFICATE OF CO	MPLIANC	Ē		
I, Cesar V. Sierra	a certify that	to the best of my know	owledge and	d belief the		
report are correct and th						
conforms to Section XI of						
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		CERTIFICATE OF IN				
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Code and the National B						
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FORM NIS-2 OWNER'S REPORT FOR REPAIR/ REPLACEMENT ACTIVITY

								ITEM	426191971
1.	Owner	Consumers	s Energy Com	pany		Date		6/26/2006	
2.	Plant	Palisades I	I Nuclear Powe	Name r Plant		Sheet	1	of	2
		27780 Blue	-	Name y, Covert, MI 49043			W	/O#26986 4	
			A	ddress		Rep	air Organizat	ion P.O. No., Job	No., etc
3.	Work Pe	rformed by		echnologies,LLC		Type Code Sy	mbol Stamp	VR/NR	
		131	-	lame Spartanburg,SC 29	301	Authorization		632 / 81	
				dress		Expiration Da	te	4/3/2009 4/9/2	009
4.	Identific	ation of Sys	tem MSS	.	<u>-</u>	Code Class			
5.	(a) Appli	cable Cons	truction Cod	ASME Section	, ,	1968	Edition		
				Addenda n/a	l	Code Case	n/a		
	(b) App	licable Editi	ion of Section	 n XI Utilized for Re	pair/Replaceme	ent Activity	1989 With No	o Addenda	
	(c) Appl	licable Sect	ion XI Code (Cases None					
6.		ation of Co							
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		conducted:	_	lydrostatic [Pneumatic	Nominal O	perating Pres	ssure 🔽	Exempt □
				Other [Pressure	ps			•F
•	Other:			_	_			- -	
•									

. 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
A A C C A
Signed Michael W. Uch , ASME Program Engineer Date Tunk ZC , Zook
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 <u>Michigan</u> 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.
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements
Inspector's Signature Commissions National Board, Province and Endorsements Date Light Solution Signature National Board, Province and Endorsements

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

1. Work performed by:	NWS Technological 131 Venture Bould	ogies, LLC evard, Spartanburg,			00004610	
2. Work performed for:	Nuclear Managem	ent Company - Palis	ades Nucle	ear Plant	- <u>-</u>	
3/4. Owner - name, add Nuclear Plant, 277		ion of nuclear power ial Hwy, Covert, Mi	•	uclear Man	agement Com	pany - Palisade
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	HA 55	RV-0722	n/a_	steam	6Q8	n/a
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9. Design responsibilitie	es: n/a		,		(=====,	(2000 0.00(0))
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12. Remarks: NWS Tra	veler#: 06-134.				· 	
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I. Charles F. Toege		lid commission issue				

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

							ITEM B	452246
1.	Owner	Consumers Energy C	Company		Date		6/26/2006	
2.	Plant	Palisades Nuclear Po	Name ower Plant		Sheet	1	of	2
		27780 Blue Star High	Name	43		V	/O#26226	
		27700 Blac Glai Filgi	Address		Repai		ion P.O. No., Job	No etc
3.	Work Per	formed by NW	S Technologies,LLC		Type Code Sym	_	VR / NR	, 0.0
			Name		Authorization	iboi ətallip	632 / 81	· · · · · · · · · · · · · · · · · · ·
		131 Venture B	lvd, Spartanburg,SC	29301 	Expiration Date	•	4/3/2009 4/9/20	009
4.	Identifica	ation of System	Address PCS		Code Class		Class 1	
5.	(a) Appli	cable Construction C	ode ASME Section	n III ,	1965	Edition		
			Addenda V	Vinter 1965	Code Case n	/a		
	(b) Appi	licable Edition of Sec	- tion XI Utilized for F	Renair/Renlaceme	ent Activity 1	989 With No	Addenda	
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	(c) Appl	icable Section XI Co	de Cases None					
6.	Identific	ation of Components				_		
	Name of		Manufacturer r Serial No.	National Board No.	Other Identification	Year Built	Corrected, Removed, or Installed	ASME Code Stamped (Yes or No)
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			Other _	Pressure	psi	Test Te	mp.	°F
(Other:			_				

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 NoN/AExpiration DateN/A
Signed Mall Communication ASME Program Engineer Date July 26 , 2000
organical participation of the
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.
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.
NOO 1 1
Inspector's Signature Commissions MI 300762 National Board, Province and Endorsements
Inspector's Signature National Board, Province and Endorsements
Date

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: Plant, 27780 Blue Star Memorial Hwy, Covert, Mi 49043 Consumers Energy - Palisades Nucl	ear
	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
	d: Construction Code: (type) (mfr's S/N) (NB#) (service) (size) () ASME Sec. III 1965 W '65a n/a 1 (name/section/division) (edition) (addenda) (Code Cases(s)) (Code Code Code Code Code Code Code Code	r.built)
	6. ASME Code Section XI applicable for inservice inspection: 1989 n/a n/a n/a	1
	(edition) (addenda) (Code Ca	
	7. ASME Code Section XI used for repairs, replacements: 1989 (edition) (addenda) (Code Cate Cate Cate Cate Cate Cate Cate Cat	se(s))
	8. Construction Code used for repairs, replacements: 1965 W 65a n/a (edition) (addenda) (Code Ca	
	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 "MR" stamp expires April 9, 2009. We have the "MR" stamp expires April 9, 2009. Authorized representative Title	
	CERTIFICATE OF INSPECTION	
	Vessel Inspectors and certificate of competency issued by the jurisdiction of North Carolina and employed by Hartford Steam Boller 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 bely 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. NB # 8462, A, N, I NC# 1073	ed cation ief, E
	Gate Inspector's Signature Commissions (NB (incl endorsements), jurisdiction,& r	10.)

SECTION 3

ASME SECTION XI ANALYSIS OF WELD NSW-010A23

QF-0549 (FP-E-CAL-01), Rev. 0



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 L	Jnit: 🖄 1 🔲 2		
Safety Class: X SR Aug Q	☐ Non SR			
Special Codes: Safeguards Pro	prietary			
Calc Type (PassPort DOC-DESC-CODE): DO	C (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: Structual 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 A	lternate Calc 🔲 Te	est		
Approved by: my 7 Veryin		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)



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

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File No.: PAL-09Q-301

Revision: 1

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:



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- 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



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- 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-CRACKTM [8].

The pc-CRACKTM 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-CRACKTM. 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.



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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,

for $R \le 0.25$:

$$SL = 1.0$$
 $SU = 1.0$ dKtran = 17.74

for $0.25 < R \le 0.65$:

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

for 0.65 < R:

$$SL = 11.76$$
 $SU = 2.5$ dKtran = 12.04

where,

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-CRACKTM output file for the crack growth analysis is presented in Appendix A.

File No.: PAL-09Q-301

Revision: 1

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.

File No.: PAL-09Q-301 Revision: 1

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-CRACKTM for Windows, Version 3.1-98348, Structural Integrity Associates, 1998.

File No.: PAL-09Q-301

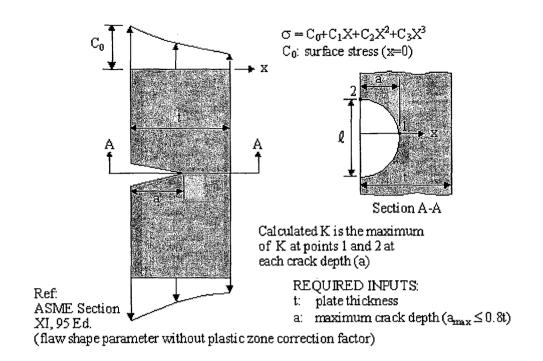


Figure 1: Elliptical Crack in Infinite Plate Model

File No.: PAL-09Q-301



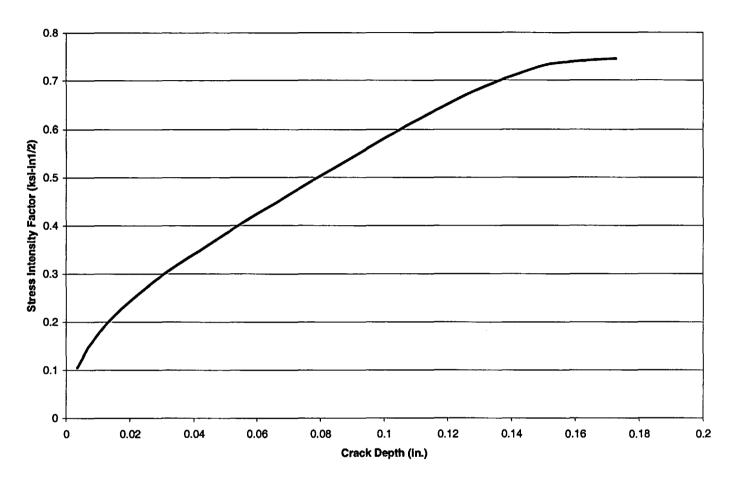


Figure 2: Applied Stress Intensity Factor

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		

File No.: PAL-09Q-301

Revision: 1

Page A1 of A15

pc-CRACK Output File for Allowable Flaw Evaluation

tm

pc-CRACK for Windows Version 3.1-98348

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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

0.0256 Kr' = 0.0134 Sr' = 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)



File No.: PAL-09Q-301

Design stress = (Pm + Pb) / Sm = 0.056318.1000

KIr (residual stress) = 0.0000 (safety factor = 1.0000)

Nominal pipe size= 3.0000 a/t = 0.6481 1/circumference = 0.0241 allowable a/t = 0.7500

End of pc-CRACK Output



File No.: PAL-09Q-301

pc-CRACK Output File for Fatigue Crack Growth Analysis

†m

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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:

Stress Coefficients

Case ID	C0	C1	C2	C3	Туре
Total	0.965	-4.148	0	0	Coeff

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

•	case
T	otal
	
0	.965
0.89	3323
0.82	1645
0.74	9968
0.6	7829
0.60	6613
0.53	4935
0.46	3258
0.3	9158
0.31	9903
0.24	8226

Crack Model: Elliptical Surface Crack in an Infinite Plate (a/1=0.5)

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

Traw Shape parameter is wremout practic 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:



File No.: PAL-09Q-301

Revision: 1

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Plate width: 0.2160 Max. crack size: 0.1728 ------Stress Intensity Factor------Crack Case Total Size 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 0.421651 0.1106 0.1140 0.4297 0.437667 0.1175 0.1210 0.445556 0.453367 0.1244 0.1279 0.461103 0.469093 0.1313 0.477352 0.1348 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 File No.: PAL-09Q-301 Revision: 1 **Structural Integrity**Associates, Inc.

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```
0.1693
               0.560177
    0.1728
               0.568493
Crack Growth Laws:
          CSteelinWater
Law ID:
          ASME Section XI - ferritic steel in water environment
Model:
  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
                   KIC
     Depth
               36.2000
    0.0000
    0.2160
               36.2000
Initial crack size=
                        0.1400
Max. crack size=
                        0.1728
Number of blocks=
                              40
Print increment of block=
                               1
                Cycles
                           Calc. Print Crk. Grw.
                                                          Mat.
Subblock
                /Time
                           incre. incre. Law
                                                          K1c
                10
                                  1
                                         CSteelinWater
                                                          Carbon Steel
Total
                             Kmax
                                                          Kmin
Subblock
                       Case ID Scale Factor
                                                    Case ID Scale Factor
Total
                          Total
                                    1.0000
                              File No.: PAL-09Q-301
                                                                             Revision: 1
      Structural Integrity
      Associates, Inc.
                                                                        Page A6 of A15
```

Crack growth results: Total Subblock DaDn Cycles Cycles Kmin /DaDt /Time /Time Kmax DeltaK R Da a/thk Block: 1 1 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 1 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 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 4 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 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 8 9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 9 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 1 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 11 12 2 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 3 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 13 0.14 0.65 0.14 0.65 14 4 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 5 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 15 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 7 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 17 0.14 0.65 8 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 18 9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 19 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 1 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 21 2 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 22 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 5 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 25 6 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 26 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 9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 29 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: 31 1 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 0.14 0.65 2 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 32 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 8 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 38 0.14 0.65 9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 39 0.14 0.65 10 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014 40 0.14 0.65



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                                                                             0.14 0.65
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File No.: PAL-09Q-301

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132 133										
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109		9	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-01	0.14	0.65
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D1 = =1c	11									
100		10	4.90e-001	0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-01	0.14	0.65
99					4.90e-001					0.65
98					4.90e-001					0.65
97					4.90e-001					0.65
96					4.90e-001					0.65
95					4.90e-001					0.65
94					4.90e-001					0.65
93					4.90e-001					0.65
92					4.90e-001					0.65
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Block:	10									
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89					4.90e-001					0.65



| File No.: PAL-09Q-301

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0.14 0.65
                6 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014
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Block:
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Block:
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File No.: PAL-09Q-301

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Block:
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Block:
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     222
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                6 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014
                7 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014
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                9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e-014
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     230
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File No.: PAL-09Q-301 Revision: 1

St.	netiii	ral Intenrity	File No.:	PAL-09Q-3	01			Rev	ision: 1
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276		7 4.90e-001 (0.65
275		6 4.90e-001 (0.65 0.65
274 275		5 4.90e-001 (0.65
273		4 4.90e-001 (0.65
272		2 4.90e-001 (3 4.90e-001 (0.65
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Block:	28	1 4 00- 001	0 00000	4 00- 001	0 00	1 46- 014	1 46- 01	14 0 14	0.65
51	0.0								
270		10 4.90e-001 (0.65
269		9 4.90e-001 (0.65
268		8 4.90e-001 (0.65
267		7 4.90e-001 (0.65
266		6 4.90e-001 (0.65
265		5 4.90e-001 (0.65
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263		3 4.90e-001 (0.65
262		2 4.90e-001 (0.65
261	21	1 4.90e-001 (0 000+000	4 90001	0 00	1 460-014	1 460-01	14 0 14	0.65
Block:	27								
260		10 4.90e-001 (0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-01	14 0.14	0.65
259		9 4.90e-001 (0.65
258		8 4.90e-001 (0.65
257		7 4.90e-001 (0.65
256		6 4.90e-001 (0.65
255		5 4.90e-001 (0.65
254		4 4.90e-001 (0.65
253		3 4.90e-001 (0.65
252		2 4.90e-001 (0.65
251	20	1 4.90e-001 (0.00e+000	4.90e-001	0.00	1.46e-014	1.46e-01	L4 0.14	0.65
Block:	26								
J 250		TO 4.206-001 (v.uue+000	4.90e-001	0.00	1.40e~U14	1.40e-U	L4 U.14	U.05
249 250		9 4.90e-001 (10 4.90e-001 (0.65 0.65
248 249		8 4.90e-001 (9 4.90e-001 (0.65
247		7 4.90e-001 (0.65
246		6 4.90e-001 (0.65
245		5 4.90e-001 (0.65
244		4 4.90e-001 (0.65
243		3 4.90e-001 (0.65
242		2 4.90e-001 (0.65
241		1 4.90e-001 (0.65
Block:	25								
]									
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236		6 4.90e-001 (0.65
234		5 4.90e-001 (0.65
233		4 4.90e-001 (0.65
232 233		2 4.90e-001 (3 4.90e-001 (0.65 0.65
231		1 4.90e-001 (0.65
Block:	24	1 4 00 - 001 4	0 00000	4 00 - 001	0 00	1 46- 014	1 46- 01		0.65
1									



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			
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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		0.14 0.65
287		7 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
288		8 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
289		9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
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230		10 4.500 001 0.000,000 4.500 001 0.00 1.400 014 1.400	011	0.14 0.03
Block:	30			
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291		2 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
3		3 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
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295		5 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
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297		7 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
298		8 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
299		9 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		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		0.14 0.65
302		2 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		0.14 0.65
303		3 4.90e-001 0.00e+000 4.90e-001 0.00 1.46e-014 1.46e		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
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Block:	32			
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·		T" N DAY 000 001		5



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                                                                               Revision: 1
                              File No.: PAL-09Q-301
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End of pc-CRACK Output

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