



UNITED STATES
 NUCLEAR REGULATORY COMMISSION
 LISLE, ILLINOIS 60532

RTU

June 23, 2004

release

MEMORANDUM TO: Patrick L. Loudon, Chief
 Projects Branch 7
 Division of Reactor Projects

FROM: Julio F. Lara, Chief */RA/*
 Electrical Engineering Branch
 Division of Reactor Safety

SUBJECT: POINT BEACH NUCLEAR PLANT
 DRS INPUT TO INTEGRATED REPORT 50-266/04-03;
 50-301/04-03

Attached is the DRS input for Point Beach Nuclear Plant Inspection Report 50-266/04-03; 50-301/04-03. I have reviewed this input and have determined it is ready for distribution to the licensee and dissemination to the public. The required sample size for this inspection was two heat exchangers (three heat exchangers were inspected). In addition, two attributes of the Ultimate Heat Sink (UHS) were inspected.

Attachment: Input to Inspection Report 50-266/04-03;
 50-301/04-03

CONTACT: Darrell Schrum, DRS
 (630) 829-9741

DOCUMENT NAME: ML041750591.wpd

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OFFICE	RIII	RIII				
NAME	DSchrum:tr	JLara				
DATE	06/23/04	06/23/04				

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Cover Letter

✓ No input, no significant findings.

Title Page

Inspectors: D. Schrum, Reactor Engineer
N. Valos, Reactor Engineer

SUMMARY OF FINDINGS

ADAMS boilerplate - Inspectable area: Baseline heat sink inspection

Modify second paragraph as follows:

This report covers a baseline heat sink inspection. This inspection was conducted by engineering specialist inspectors. No findings of significance were identified during this inspection.

A. Inspector-Identified and Self-Revealed Findings

Cornerstone: Mitigating Systems

No findings of significance were identified.

B. Licensee-Identified Violations

No findings of significance were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R07 Heat Sink Performance (71111.07)

.1 Biennial Review of Heat Sink Performance

a. Inspection Scope

The inspectors reviewed documents associated with inspection, cleaning, and performance trending of heat exchangers primarily focusing on the Component Cooling Heat Exchanger (HX-12C) and the Emergency Diesel Generator (EDG) Coolant Heat Exchangers (G01 and G02). These heat exchangers were chosen based upon their importance in supporting required safety functions as well as relatively high risk achievement worth in the plant specific risk assessment. The component cooling heat

exchanger was also selected to evaluate the licensee's thermal performance testing methods. During the inspection, the inspectors reviewed calculations to verify that these activities adequately ensured proper heat transfer. The inspectors reviewed the documentation to confirm that the inspection methodology was consistent with accepted industry and scientific practices, based on review of heat transfer texts and Electrical Power Research Institute (EPRI) standards. Specifically, the inspectors reviewed the licensee's heat transfer related calculations and/or maintenance activities to confirm that the minimum design heat transfer capability was maintained for these heat exchangers, in accordance with licensee commitments to Generic Letter 89-13 and limiting design performance values identified in the Updated Final Safety Analysis Report.

The inspectors performed a field walkdown of the component cooling water heat exchangers, the service water chemical treatment system, and the copper ion generator system. In addition, the inspectors observed the cleaning of EDG coolant heat exchanger G01.

The inspectors' review of licensee activities and documents regarding the Component cooling heat exchanger and EDG coolant heat exchangers (G01 and G02) constituted three samples (two required) for the biennial review of heat sink performance in accordance with Section 71111.07-05 of procedure 71111.07, "Heat Sink Performance."

The inspectors reviewed documents associated with licensee controls for the service water from the ultimate heat sink (UHS) to prevent clogging due to macrofouling and biotic fouling. These two attributes met the procedure requirements for verifying the performance of the UHS.

The inspectors reviewed condition reports concerning heat exchanger and ultimate heat sink performance issues to verify that the licensee had an appropriate threshold for identifying issues and entering them in the corrective action program. The inspectors also evaluated the effectiveness of the corrective actions for identified issues, including the engineering justification for operability.

The documents that were reviewed are included at the end of this report.

b. Findings

No findings of significance were identified.

4. **OTHER ACTIVITIES**

4OA6 Meetings

.2 Interim Exit Meeting

An interim exit was conducted for:

- Heat Sink Inspection with J. Connally, Regulatory Affairs Manager, on May 16, 2004.

KEY POINTS OF CONTACT

Licensee

J. Connelly, Regulatory Affairs Manager
P. Holzman, Heat Exchanger Engineer
K. Locke, Regulatory Specialist
C. Richardson, Design Engineer
J. Schroeder, Service Water System Engineer

LIST OF DOCUMENTS REVIEWED

IR07 Heat Sink Performance (71111.07)

Calculations

Calculation 98-0051; Service Water (SW) System Heat Exchanger HX-55 A/B Flow Requirements; Revision 2; dated December 9, 2003

Calculation N-94-059; Component Cooling Water (CCW), HX-012A-D, Service Water Flow Verses Temperature Requirements; Revision 1; dated July 17, 2003

Calculation 2003-007; CCW Tube Plugging and Stabilization Criteria; Revision 0; dated March 7, 2003

Calculation 2003-008; CCW HX Plugging Limit; Revision 1; dated October 2, 2003

Calculation 2003-0037; Diesel Cooler Lakegrass Fouling Acceptance Criteria; dated September 5, 2003

Calculation PGT-2000-1382; Point Beach Nuclear Plant Component Cooling Water Heat Exchangers HX-012C and HX-012D Thermal Performance Test Data Evaluation and Uncertainty Analysis; Revision 1; dated December 6, 2001

Calculation PGT-2002-1270; Point Beach Nuclear Plant Component Cooling Water Heat Exchangers HX-012C and HX-012D Thermal Performance Test Data Evaluation and Uncertainty Analysis; Revision 0; dated May 24, 2002

Drawings

Drawing Number D-9643; Component Cooling Water Heat Exchanger; Atlas Industrial Manufacturing Co.; Revision 4; dated September 9, 1985

Drawing Number D-322730; Heat Exchanger Equip. #1 and 2, HX-55A1 and B1; Young Radiator Co.; dated May 3, 1990

Condition Reports Reviewed During the Inspection

CAP011404; Significant Amount of Silt in Seal and Baseplate Leakage - SW Pumps; dated January 25, 2000

CAP001861; Diesel Cooler Fouling; dated January 14, 2002

CAP028437; G-01 Diesel Cooler Zebra Mussel and Lake Weed Fouling; dated June 11, 2002

CAP029092; G-02 Diesel Cooler Fouling; dated August 20, 2002

CAP030353; Continuing G0-2 Diesel Cooler Fouling; dated December 9, 2002

CAP030499; Major G0-1 Diesel Cooler Fouling; dated December 19, 2002

CAP033365; G0-2 Diesel Cooler Fouling; dated June 6, 2003

CAP033890; G0-2 Diesel Cooler Fouling; dated July 2, 2003

CAP034365; G0-2 Diesel Cooler Fouling; dated July 28, 2003

CAP0500040; G0-1 Diesel Cooler Fouling and G0-2 Concerns; dated September 10, 2003

CAP050119; G0-2 Diesel Cooler Fouling - Post Operability Determination Required; dated September 11, 2003

CAP051874; Significant G0-2 Diesel Cooler Fouling Past Operability Determination Required; dated November 17, 2003

CAP051944; G0-1 Diesel Cooler Fouling; dated November 20, 2003

CAP052753; G02 EDG H/X-055B-1 & HX-055B-2 Inspection Results; dated January 12, 2004

CAP053209; Jan 04 G0-1 Diesel Cooler Fouling; dated January 26, 2004

CAP053569; G0-1 Diesel Cooler Fouling; dated February 5, 2004

CAP053900; Feb 13 G0-1 Diesel Cooler Fouling; dated February 16, 2004

CAP054615; March G0-2 Diesel Cooler Fouling; dated March 9, 2004

CAP054789; Mar 14 G0-1 Diesel Cooler Fouling; dated March 15, 2004

CAP055100; Mar 25 G0-1 Diesel Cooler Fouling; dated March 25, 2004

CAP055182; Mar 29 G0-2 Diesel Cooler Fouling; dated March 29, 2004

CAP055905; April 19 G0-1 Diesel Cooler Fouling; dated April 20, 2004

CAP056354; May 3 G0-2 Diesel Cooler Fouling; dated May 3, 2004

CAP056853; May 18 G0-1 Diesel Cooler Fouling; dated May 20, 2004

CAP057186; June 3 G0-2 Diesel Cooler Fouling; dated June 3, 2004

Condition Reports Written as a Result of the Inspection

CAP057330; GL 89-13 2002 Annual Report Never Written; dated June 10, 2004

CAP057403; Revise GL 89-13 2002 Program Document; dated June 15, 2004

CAP057406; OI-151 Procedure Compliance; dated June 15, 2004

CAP057409; FSAR Section 9.6 Contains Outdated Information on Zebra Mussel Control; dated June 15, 2004

CAP057420; ARB Actions Inconsistent With OI-70 Att. B for Low SW Flow to G01/G02 H/Xs; dated June 16, 2004

OTH013682; Calculation 98-0051 Typographical Error; dated June 15, 2004

Operability Determinations

CR-00-0267; Revision 1; dated March 17, 2000

MRE000147; Significant G0-2 Diesel Cooler Fouling Past Operability Determination Required; dated December 12, 2003

Apparent Cause Evaluations

ACE 001157; Apparent Cause Evaluation of CAP030619 and CAP030640; dated February 7, 2003

ACE001657; K-3A Service Air Compressor SW Strainer Found Plugged With Grass; dated April 21, 2004

Procedures

OI 70; Service Water System Operation; Revision 49; dated May 24, 2004

ARB C02 D 3-6; G-01 Emerg Diesel Cooler Low Flow; Revision 5; dated November 8, 2001

ARB C02 F 3-1; G-02 Emerg Diesel Cooler Flow Low; Revision 9; dated July 26, 2001

1-SOP-CC-001; Component Cooling System; Revision 11; dated January 5, 2004

CAMP 917; Copper Ion Generator; Revision 6; dated March 23, 2004

HX-01; Heat Exchanger Condition Assessment Program; Revision 2; dated May 18, 2004

HX-01; Heat Exchanger Condition Assessment Program, Appendix C; Unit 1 Outage Cycle Inspection Schedule; Revision 1; dated February 25, 2004

HX-01; Heat Exchanger Condition Assessment Program, Appendix D; Unit 2 Outage Cycle Inspection Schedule; Revision 1; dated February 25, 2004

HX-01; Heat Exchanger Condition Assessment Program, Appendix E; Annual Cycle Inspection Schedule; Revision 1; dated February 25, 2004

AM 3 -19; Biofouling Control Program; Revision 1; dated November 29, 2000

NP 7.7.15; Biofouling Control Methods; Revision 1; dated November 29, 2000

DG-CH01; Zebra Mussel Tracking and Evaluation; Revision 0; dated December 9, 1999

CD 5.25; Generic Letter 89-13 Standard; Revision 0; dated June 12, 2003

Completed Inspections/Surveillance Procedures

Completed Bio/Silt Fouling Inspection Forms for Diesel Generator Heat Exchangers HX-055A-1 and HX-055A-2; dated various between March 18, 2003 through June 14, 2004

Completed Bio/Silt Fouling Inspection Forms for Diesel Generator Heat Exchangers HX-055B-1 and HX-055B-2; dated various between August 20, 2002 through June 3, 2004

Completed Miscellaneous Heat Exchangers Cleaning and Inspection Program, Appendix A; Heat Exchanger Internal Visual Inspection Checklist for HX-12C; dated August 19, 2002

Completed OI 151; HX-012C and D Component Cooling System Heat Exchanger Data Collection; dated October 15, 2000

Completed OI 151; HX-012C and D Component Cooling System Heat Exchanger Data Collection; dated April 14, 2002

Miscellaneous

Heat Exchanger Specification Sheet; Component Cooling Heat Exchanger; dated February 24, 1992

System Health Report Service Water; dated January 30, 2004

System Health Report Service Water; dated April 13, 2004

System Health Report Component Cooling Water System; dated January 8, 2004

System Health Report Diesel Generator System; dated April 23, 2004

System Health Rating Status - CW; dated May 2004

Performance Criteria Assessments for CC since 6/1/2001; dated June 3, 2004

Performance Criteria Assessments for DG since 6/1/2001; dated June 3, 2004

Performance Criteria Assessments for SW since 6/1/2001; dated June 3, 2004

DBD-02; Component Cooling System Design Basis Document; Revision 4; dated March 19, 2004

DBD-10; Residual Heat Removal System Design Basis Document; Revision 3; dated March 19, 2004

DBD-12; Service Water System Design Basis Document; Revision 6; dated May 26, 2004

DBD-16; Emergency Diesel Generator System Design Basis Document; Revision 4; dated April 30, 2004

Point Beach FSAR Section 9.1; Component Cooling Water (CC); dated June 2003

Point Beach FSAR Section 9.6; Service Water System (SW); dated June 2002

Point Beach FSAR Appendix A; Shared System Analysis; dated June 1998

FCR 04-007; Final Safety Analysis Report Change Request; dated February 3, 2004

Point Beach Technical Specification 3.7.7; Component Cooling Water (CC) System and Associated Bases B 3.7.7; Unit 1 - Amendment No. 201; Unit 2 - Amendment No. 206

Point Beach Technical Specification 3.7.8; Service Water (SW) System and Associated Bases B 3.7.8; Unit 1 - Amendment No. 201; Unit 2 - Amendment No. 206

Service Water System Operational Performance Inspection; dated October 6, 1993

TIN NO. 97-1177, Revision 1; Test Protocol Wisconsin Electric Power Company Point Beach Nuclear Plant Component Cooling Water Heat Exchanger; dated January 17, 2001

PBSA-ENG-03-02; Component Cooling (CC) Water System Self-Assessment; dated September 8, 2003

GL 89-13 Annual Report for 2001; dated March 22, 2002

Point Beach GL 89-13 Program - 2003 Annual Report; dated March 22, 2004

Point Beach GL 89-13 Program Self-Assessment # PBSA-ENG-03-15; dated December 23, 2003

Program Health Status; Service Water/Microbiologically Induced Corrosion; dated May 21, 2004

Program Health Status; Heat Exchanger Safety Related NRC GL 89-13; dated May 28, 2004

GL-89-13 Program Document; Revision 3; dated January 29, 2004

2003 EVAC Treatment Effectiveness Report; dated September 29, 2003

Zebra Mussel Program Effectiveness Report - Annual; dated November 13, 2003

4th Quarter 2003 Service Water System Maintenance Rule Summary; dated January 15, 2004

GL 89-13 Program; 2003 SW System Engineer Report; dated February 13, 2004

Response to Generic Letter 89-13, Safety Related Service Water Problem Point Beach Nuclear Plant; dated January 12, 1990

Work Orders

Completed Work Order Number 9912379; Component Cooling Heat Exchanger HX-012C; dated January 5, 2001

Completed Work Order Number 0206227; Component Cooling Heat Exchanger HX-012C; dated August 28, 2002

Completed Work Order Number 9925508; G-01 Emergency Diesel Generator Coolant HX (East); dated May 29, 2001

Completed Work Order Number 9934401; G-01 Emergency Diesel Generator Coolant HX (East); dated August 1, 2001

Completed Work Order Number 9940300; G-01 Emergency Diesel Generator Coolant HX (East); dated May 25, 2001

Completed Work Order Number 9935151; G-01 Emergency Diesel Generator Coolant HX (East); dated June 20, 2002

Completed Work Order Number 0205750; G-01 Emergency Diesel Generator Coolant HX (East); dated July 3, 2002

Completed Work Order Number 0207039; G-01 Emergency Diesel Generator Coolant HX (East); dated December 26, 2002

Completed Work Order Number 0300008; G-01 Emergency Diesel Generator Coolant HX (East); dated March 24, 2003

Completed Work Order Number 0300015; G-01 Emergency Diesel Generator Coolant HX (East); dated May 28, 2003

Completed Work Order Number 0300017; G-01 Emergency Diesel Generator Coolant HX (East); dated November 11, 2003

Completed Work Order Number 0300018; G-01 Emergency Diesel Generator Coolant HX (East); dated December 6, 2003

Completed Work Order Number 0301022; G-01 Emergency Diesel Generator Coolant HX (East); dated January 14, 2003

Completed Work Order Number 0303667; G-01 Emergency Diesel Generator Coolant HX (East); dated June 18, 2003

Completed Work Order Number 0303668; G-01 Emergency Diesel Generator Coolant HX (East); dated July 21, 2003

Completed Work Order Number 0303674; G-01 Emergency Diesel Generator Coolant HX (East); dated September 11, 2003

Completed Work Order Number 0310370; G-01 Emergency Diesel Generator Coolant HX (East); dated January 11, 2004

Completed Work Order Number 0310371; G-01 Emergency Diesel Generator Coolant HX (East); dated February 21, 2004

Completed Work Order Number 9925507; G-01 Emergency Diesel Generator Coolant HX (West); dated May 29, 2001

Completed Work Order Number 9934400; G-01 Emergency Diesel Generator Coolant HX (West); dated August 1, 2001

Completed Work Order Number 9935150; G-01 Emergency Diesel Generator Coolant HX (West); dated June 20, 2002

Completed Work Order Number 9940299; G-01 Emergency Diesel Generator Coolant HX (West); dated May 25, 2001

Completed Work Order Number 0205749; G-01 Emergency Diesel Generator Coolant HX (West); dated July 3, 2002

Completed Work Order Number 0207037; G-01 Emergency Diesel Generator Coolant HX (West); dated December 26, 2002

Completed Work Order Number 0300007; G-01 Emergency Diesel Generator Coolant HX (West); dated March 24, 2003

Completed Work Order Number 0300012; G-01 Emergency Diesel Generator Coolant HX (West); dated September 2, 2003

Completed Work Order Number 0300013; G-01 Emergency Diesel Generator Coolant HX (West); dated November 11, 2003

Completed Work Order Number 0300014; G-01 Emergency Diesel Generator Coolant HX (West); dated December 6, 2003

Completed Work Order Number 0301023; G-01 Emergency Diesel Generator Coolant HX (West); dated January 14, 2003

Completed Work Order Number 0303662; G-01 Emergency Diesel Generator Coolant HX (West); dated June 18, 2003

Completed Work Order Number 0310360; G-01 Emergency Diesel Generator Coolant HX (West); dated January 11, 2004

Completed Work Order Number 0310361; G-01 Emergency Diesel Generator Coolant HX (West); dated February 21, 2004

Completed Work Order Number 9926689; G-02 Emergency Diesel Generator Coolant HX (East); dated August 14, 2000

Completed Work Order Number 9926693; G-02 Emergency Diesel Generator Coolant HX (East); dated October 3, 2000

Completed Work Order Number 9927125; G-02 Emergency Diesel Generator Coolant HX (East); dated July 18, 2000

Completed Work Order Number 9927420; G-02 Emergency Diesel Generator Coolant HX (East); dated February 19, 2002

Completed Work Order Number 9934403; G-02 Emergency Diesel Generator Coolant HX (East); dated August 1, 2001

Completed Work Order Number 9936321; G-02 Emergency Diesel Generator Coolant HX (East); dated February 4, 2002

Completed Work Order Number 9938065; G-02 Emergency Diesel Generator Coolant HX (East); dated February 25, 2002

Completed Work Order Number 0205752; G-02 Emergency Diesel Generator Coolant HX (East); dated September 6, 2002

Completed Work Order Number 0207043; G-02 Emergency Diesel Generator Coolant HX (East); dated December 11, 2002

Completed Work Order Number 0216411; G-02 Emergency Diesel Generator Coolant HX (East); dated March 17, 2003

Completed Work Order Number 0216412; G-02 Emergency Diesel Generator Coolant HX (East); dated June 12, 2003

Completed Work Order Number 0216413; G-02 Emergency Diesel Generator Coolant HX (East); dated October 21, 2003

Completed Work Order Number 0216414; G-02 Emergency Diesel Generator Coolant HX (East); dated November 9, 2003

Completed Work Order Number 0301037; G-02 Emergency Diesel Generator Coolant HX (East); dated January 14, 2003

Completed Work Order Number 0303672; G-02 Emergency Diesel Generator Coolant HX (East); dated July 8, 2003

Completed Work Order Number 0303673; G-02 Emergency Diesel Generator Coolant HX (East); dated July 29, 2003

Completed Work Order Number 0310390; G-02 Emergency Diesel Generator Coolant HX (East); dated February 21, 2004

Completed Work Order Number 9934402; G-02 Emergency Diesel Generator Coolant HX (West); dated August 1, 2001

Completed Work Order Number 9936367; G-02 Emergency Diesel Generator Coolant HX (West); dated February 4, 2002

Completed Work Order Number 9938063; G-02 Emergency Diesel Generator Coolant HX (West); dated February 25, 2002

Completed Work Order Number 0205751; G-02 Emergency Diesel Generator Coolant HX (West); dated January 16, 2002

Completed Work Order Number 0207041; G-02 Emergency Diesel Generator Coolant HX (West); dated December 11, 2002

Completed Work Order Number 0216406; G-02 Emergency Diesel Generator Coolant HX (West); dated March 17, 2003

Completed Work Order Number 0216407; G-02 Emergency Diesel Generator Coolant HX (West); dated June 13, 2003

Completed Work Order Number 0216408; G-02 Emergency Diesel Generator Coolant HX (West); dated October 21, 2003

Completed Work Order Number 0216409; G-02 Emergency Diesel Generator Coolant HX (West); dated November 19, 2003

Completed Work Order Number 0301038; G-02 Emergency Diesel Generator Coolant HX (West); dated January 15, 2003

Completed Work Order Number 0303669; G-02 Emergency Diesel Generator Coolant HX (West); dated July 8, 2003

Completed Work Order Number 0303670; G-02 Emergency Diesel Generator Coolant HX (West); dated July 29, 2003

Completed Work Order Number 0303852; G-02 Emergency Diesel Generator Coolant HX (West); dated April 1, 2003

Completed Work Order Number 0310380; G-02 Emergency Diesel Generator Coolant HX (West); dated February 21, 2004

Completed Work Order Number 0310381; G-02 Emergency Diesel Generator Coolant HX (West); dated May 18, 2004

Completed Work Order Number 0310384; G-02 Emergency Diesel Generator Coolant HX (West); dated May 18, 2004

LIST OF ACRONYMS USED

ACE	Apparent Cause Evaluation
ALB	Alarm Response Book
CAP	Corrective Action Program
CC	Component Cooling
CCW	Component Cooling Water
CW	Circulating Water
DBD	Design Basis Document
DG	Diesel Generator
DRP	Division of Reactor Projects
DRS	Division of Reactor Safety
EDG	Emergency Diesel Generator
EPRI	Electric Power Research Institute
FSAR	Final Safety Analysis Report
GL	Generic Letter
HX	Heat Exchanger
NRC	Nuclear Regulatory Commission
SW	Service Water
UHS	Ultimate Heat Sink