

10 CFR 50.73

October 1, 2004
2130-04-20223

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

Oyster Creek Generating Station
Facility Operating License No. DPR-16
NRC Docket No. 50-219

Subject: Licensee Event Report 2004-004-00: Operation in Excess of the Thermal Power Limit Due to Plant Computer Isolator Power Supply Degradation Affecting Input Values to the Heat Balance Calculation

Enclosed is Licensee Event Report 2004-004, Revision 0. This event did not affect the health and safety of the public or plant personnel.

If any further information or assistance is needed, please contact David Fawcett at 609-971-4284.

Sincerely,



C. N. Swenson
Vice President, Oyster Creek Generating Station

CNS/DIF
Enclosure

cc: S. J. Collins, Administrator, USNRC Region I
P. S. Tam, USNRC Senior Project Manager, Oyster Creek
R. J. Summers, USNRC Senior Resident Inspector, Oyster Creek
File No. 04111

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LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Oyster Creek, Unit 1	2. DOCKET NUMBER 05000 219	3. PAGE 1 OF 3
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4. TITLE
Operation in Excess of the Thermal Power Limit Due to Plant Computer Isolator Power Supply Degradation Affecting Input Values to the Heat Balance Calculation

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
09	01	2004	2004	004	00	10	01	2004	FACILITY NAME	DOCKET NUMBER
										05000
										05000

9. OPERATING MODE N 10. POWER LEVEL 100	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)									
	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)						
	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)						
	<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)						
	<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)						
	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)						
	<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)						
	<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)						
	<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input checked="" type="checkbox"/> OTHER						
	<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A						

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME David Fawcett, Licensing Engineer	TELEPHONE NUMBER (Include Area Code) (609) 971-4284
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
E	ID	CAP	Lambda	Y					

14. SUPPLEMENTAL REPORT EXPECTED <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On September 1, 2004, at 13:50 (EDT), upon installation of a replacement Plant Computer System (PCS) (EIS-ID) Isolator Power Supply (EIS-RJX), the PCS Heat Balance indicated 1936 MWth, which exceeded the licensed maximum power limit of 1930 MWth. Initial results of the prompt investigation indicated that the power supply began to degrade on August 29, 2004. This degradation resulted in a slow lowering of indicated Control Rod Drive (CRD) (EIS-AA) Flow, which provides input to the PCS Heat Balance calculation. Based on evaluations of the impact of the degradation, the 1930 MWth limit was exceeded on August 30, 2004 at 18:41. Power peaked at 1937 MWth, approximately 100.4%, on September 1, 2004. As a result, the thermal power limit was exceeded for greater than eight hours prior to recognition and actions taken to restore power below the license limit.

The cause of this event was the slow degradation of the PCS isolator power supply, which resulted in a non-conservative heat balance calculation.

All safety systems were fully operable and the safety significance of this event is considered minimal based on the small amount of deviation from the thermal power limit.

There were no previous similar events of slowly degrading heat balance input parameters causing calculated core thermal power to lower resulting in operator actions to raise reactivity and consequently thermal power inadvertently above the license limit.

LICENSEE EVENT REPORT (LER)

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Oyster Creek, Unit 1	05000219	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2004	- 004	- 00	

17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

Description of Event

At 09:38 on September 1, 2004, a Plant Computer System (PCS) (EIS-ID) Isolator Power Supply (EIS-RJX) failed. In accordance with procedures an administrative control rod block was inserted and all reactivity manipulations ceased. At 13:50, upon installation of a replacement PCS isolator Power Supply, the PCS heat balance indicated 1936 MWth that was in excess of the maximum steady state power limit of 1930 MWth for Oyster Creek. The Reactor Operator (RO) lowered reactor power to restore and maintain indicated heat balance power less than 1930 MWth. At 15:00, a manual heat balance was calculated to verify the indicated Plant Computer System (PCS) Heat Balance.

Initial indications are that the PCS Isolator Power Supply began to degrade on August 29, 2004. This degradation resulted in a lowering of indicated Control Rod Drive (CRD) (EIS-AA) Flow into the PCS Heat Balance calculation. There were no audible alarms as indicated CRD flow reduced. The computer generated PCS alarms at three setpoints on a display screen in the Main Control Room (MCR) with numerous other computer inputs that have changed state. The RO maintained indicated PCS heat balance slightly below 1930 MWth as expected. Reactor Recirculation System (EIS-AD) flow adjustments to maintain slightly below 100% power were not abnormally high during the power supply degradation.

Based on evaluations of the degradation of the CRD Flow input to the heat balance, the 1930 MWth limit was exceeded on August 30, 2004 at 18:41. The peak power attained was 1937 MWth, approximately 100.4%, on Sept. 1, 2004. Since 1930 MWth was exceeded for more than eight hours, this event is reportable within 30 days under Operating License Condition 2.E as a violation of 2.C.(1), Maximum Power Level.

Analysis of Event

The significance of this event on plant safety was minimal since the actual peak sustained power level was less than the 102% reactor power assumed as initial conditions in updated facility safety accident report (UFSAR) analysis.

Cause of Event

Degradation of the power supply for PCS isolator cabinet PC-1.

Corrective Actions:

1. Reduced Reactor power to <1930 MWth per PCS Heat Balance.
2. Verified correct all computer inputs into the PCS Heat Balance.
3. Established a PCS Point Group for Heat Balance inputs that are being checked twice per shift per a new Operations Standing Order.
4. Briefed the operating crews on the event, highlighting the shortfalls identified and the importance of periodically confirming that PCS heat balance inputs are not in an alarm condition.
5. Failed power supply was replaced.

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17. NARRATIVE *(If more space is required, use additional copies of NRC Form 366A)*

Corrective Actions (cont'd)

- 6. Extent of condition was performed by verifying the operable condition of other PCS isolator power supplies.

Additional Information

A. Failed Components:

Degradation of the PCS isolator power supply.

B. Previous similar events:

None

C. Identification of components referred to in this Licensee Event Report:

Components	IEEE 805 System ID	IEEE 803A Function
CAP	ID	RJX