

Exelon Generation Company, LLC      www.exeloncorp.com  
Braidwood Station  
35100 South Rt 53, Suite 84  
Braceville, IL 60407-9619  
Tel. 815-417-2000

August 2, 2004  
BW040076

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

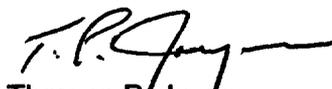
Braidwood Station, Unit 1  
Facility Operating License No. NPF-72  
NRC Docket No. STN 50-456

**Subject: Submittal of Licensee Event Report Number 2004-002-00, "1C Reactor Containment Fan Cooler Discovered to be Inoperable Greater Than Required Technical Specification Allowed Outage Time"**

The enclosed Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73, "Licensee event report system", paragraph (a)(2)(i)(B). 10 CFR 50.73(a) requires an LER to be submitted within 60 days after discovery of the event; therefore, this report is being submitted by August 2, 2004.

Should you have any questions concerning this submittal, please contact Scott Butler, Acting Regulatory Assurance Manager, at (815) 417-2815.

Respectfully,

  
Thomas P. Joyce  
Site Vice President  
Braidwood Station

Enclosure: LER Number 2004-002-00

cc: Regional Administrator - Region III  
NRC Braidwood Senior Resident Inspector

*IEA*

<b>NRC FORM 366</b> (7-2001)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	<b>APPROVED BY OMB NO. 3150-0104 EXPIRES 7-31-2004</b> Estimated burden per response to comply with this information collection request: 50.0 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to <a href="mailto:bj1@nrc.gov">bj1@nrc.gov</a> , and to the Desk Officer, Office of Information and Regulatory Affairs, NOEB-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.
<b>LICENSEE EVENT REPORT (LER)</b>		

<b>1. FACILITY NAME</b> Braidwood, Unit 1	<b>2. DOCKET NUMBER</b> STN 05000456	<b>3. PAGE</b> 1 of 4
--	---	--------------------------

**4. TITLE**  
1C Reactor Containment Fan Cooler discovered to be inoperable greater than required Technical Specification Allowed Outage Time

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEA	SEQUENTIAL NUMBER	REV NO	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
06	01	2004		2004-002-00		08	02	2004	N/A	N/A
									FACILITY NAME	DOCKET NUMBER
									N/A	N/A

<b>9. OPERATING MODE</b>	1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)</b>								
<b>10. POWER LEVEL</b>	100	<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"/> 73.73(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"/> 73.73(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 type="checkbox"/> OTHER					
		<input type="checkbox"/> 20.2203(a)(2)(vi)	<input checked="" 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					
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						

12. LICENSEE CONTACT FOR THIS LER	
<b>NAME</b> Gary Dudek, Operations Director	<b>TELEPHONE NUMBER (Include Area Code)</b> (815) 417-2200

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT									
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO epiX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

14. SUPPLEMENTAL REPORT EXPECTED				15. EXPECTED SUBMISSION DATE				
Yes (if yes, complete EXPECTED SUBMISSION DATE).				X	NO	MONTH	DAY	YEAR

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

On June 1, 2004, during the monthly Reactor Containment Fan Cooler (RCFC) surveillance, the 1C RCFC Essential Service Water (SX) flow rate was found below the Technical Specification (TS) 3.6.6 limit of 2660 gpm due to low flow through one bank of the RCFC. Flow had been last adjusted on May 6, 2004.

The investigation determined that SX flow indicator 1F-SX118 was inaccurate when the flow was set on May 6, 2004 due to flow indicator fouling. The inaccurate flow indication was not recognized due to inadequate management decisions relating to the effects of the Braidwood lake precipitation event that occurred in February 2004. Organizational and programmatic issues were identified that contributed to the failure to recognize the flow degradation of the 1F-SX118 indication loop and related piping following the lake precipitation event.

The consequence of this event is the failure to meet the TS Limiting Condition for Operation due to inoperability of the 1C RCFC. The low flow condition in the 1C RCFC may have resulted in silt build-up of the 1C RCFC cooling coils with a resulting failure of the 1C RCFC thermal performance test. The safety consequences of this event are minimal.

This event is being reported pursuant to 10CFR50.73(a)(2)(i)(B).

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Braidwood, Unit 1	STN 05000456	2004	002	00	2 of 4

A. Plant Operating Conditions Before The Event:

Unit: 1                      Event Date: June 1, 2004                      Event Time: 1338  
MODE: 1                      Reactor Power: 100 percent

Reactor Coolant System (RCS) [AB] Temperature: 587 degrees F, Pressure: 2236 psig

B. Description of Event:

There were no additional systems or components inoperable at the beginning of this event that contributed to the severity of the event.

On May 6, 2004, during performance of 1BwOSR 3.6.6.2, "Reactor Containment Fan Cooler Surveillance," the as found Essential Service Water (SX) [BI] flow values to the two cooling coil banks for the 1C Reactor Containment Fan Cooler (RCFC) [IK] were 1420 gpm on flow indicator 1F-SX124 and >1700 gpm on flow indicator 1F-SX118. Since the flow to the 1C RCFC was greater than the specified band in the surveillance, the Shift Manager authorized adjusting the 1F-SX118 flow. A non-licensed operator (NLO) adjusted 1SX021C (the throttle valve for 1F-SX118) to reduce flow. The procedure is performed by two NLOs inside of containment. The "valve NLO" is on one elevation and the "gauge NLO" is on another elevation (valve 1SX021C is physically located on one elevation and the flow gauge 1F-SX118 is located on another elevation). As the valve NLO adjusted 1SX021C, the gauge NLO monitored flow on 1F-SX118. The valve NLO made several small adjustments to 1SX021C before the flow indicated on 1F-SX118 responded and returned from the pegged high condition (gauge band is from 0 to 1700 gpm) to within the gauge band.

Flow on 1F-SX118 stabilized at 1400 gpm. The gauge NLO monitored the flow on 1F-SX118 for one to two minutes to ensure the flow was stable so that the NLOs would not have to re-perform the surveillance. The valve NLO locked 1SX021C in the throttled position. The gauge NLO verified SX flow was still stable at 1400 gpm, then went to 1SX021C and verified the valve was locked. The NLOs did not check valve position because 1BwOSR 3.6.6.2 stated to adjust the flow to a specified flow range and not to a valve position. It was later determined that valve 1SX021C was locked at the 8% open position. The NLOs checked the other flow gauge 1F-SX124 and found flow at 1400 gpm.

On June 1, 2004, 1BwOSR 3.6.6.2 was performed as part of the monthly scheduled surveillance. The NLOs in containment noted that the SX flows to the 1C RCFC were below the Technical Specification (TS) limit for flow of 2660 gpm with SX flow to 1F-SX124 at 1440 gpm and SX flow to 1F-SX118 at 475 gpm (total flow = 1915 gpm). The surveillance was stopped, the Shift Manager was notified and TS Limiting Condition for Operation (LCO) 3.6.6 was entered. The SX flow to the 1C RCFC was not adjusted at this time to preserve the as-found conditions for troubleshooting purposes.

## LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Braidwood, Unit 1	STN 05000456	2004	002	00	3 of 4

Investigation and testing identified that the flow indicated on 1F-SX118 had a delayed time response due to flow indicator fouling. Following venting, blowing down and back flushing the sensing lines and recalibrating the gauges, accurate flow indicated on 1F-SX118 was restored and verified by an ultrasonic measurement. Based on accurate flow indication of approximately 450 gpm, it was identified that 1SX021C had been throttled too far closed on May 6, 2004. 1SX021C was throttled open until proper flow was established, and LCO 3.6.6 was exited at 1955 on June 2, 2004.

The last recorded flow for both banks of SX cooling for 1C RCFC was performed on May 6, 2004. Since no valve position had been changed since the last performance, the 1C RCFC was determined to be inoperable since May 6, 2004. The LCO allowed outage time for the RCFCs per LCO 3.6.6 is seven days. Therefore, the 1C RCFC was determined to be inoperable for greater than the allowed LCO outage time per LCO 3.6.6.

**C. Cause of Event**

The root cause for this event was inadequate management decisions relating to the effects of the February 2004 Braidwood lake precipitation event. This caused management to focus on identifying another lake precipitation event which prevented the Station from adequately monitoring the 1C RCFC performance.

The following are aspects of the inadequate technical rigor discussed above. There were missed opportunities to identify the inaccurate indications on 1F-SX118. An Adverse Condition Monitoring (ACM) plan was initiated on February 2, 2004, to monitor the SX flows to various safety related components and to identify if additional degradation of safety related equipment was occurring due to the February 2004 lake precipitation event. The ACM plan did not initially identify the RCFCs as part of the plan to monitor RCFC performance. After the RCFCs were incorporated into the ACM plan, the plan did not adequately monitor the RCFCs nor provide direction on what to do with the data once it was recorded. In addition, the plan did not monitor or record throttle valve positions on the RCFCs. Other opportunities to identify problems with the 1C RCFC flow indication were also missed on three occasions when significant adjustments of flow were made but not recognized as indicative of potential flow indication inaccuracies.

**D. Safety Consequences:**

The low flow condition in the 1C RCFC, from May 6, 2004, to June 2, 2004, resulted in silt build-up on the 1C RCFC cooling coils with a subsequent failure of the 1C RCFC thermal performance test on June 29, 2004.

The safety consequences of this event are minimal. A risk assessment was performed and concluded the associated risk was low. The containment cooling system design is analyzed for a loss of one train of containment spray (CS) and one train of RCFCs (one train contains two RCFCs). The inoperability of one RCFC is within the plant design criteria. A 100 percent capacity redundant RCFC train was operable during the event. Although the 1C RCFC failed its thermal

**LICENSEE EVENT REPORT (LER)**

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Braidwood, Unit 1	STN 05000456	2004	002	00	4 of 4

performance test on June 29, 2004, subsequent evaluation demonstrated that, based on actual SX temperatures, the 1C RCFC could have performed its design function at all times with the exception of a cumulative period of three days and five hours (the longest consecutive period was two days and eleven hours) in June 2004. This was within the acceptable LCO 3.6.6 completion time.

This event did not result in a safety system functional failure.

**E. Corrective Actions:**

The corrective action to prevent recurrence was the implementation of the new process for increased technical rigor in creating adverse condition monitoring plans in accordance with the procedure titled "Technical Task Risk/Rigor Assessment Pre-Job Brief, Independent Third Party Review, and Post-Job Brief." In addition, a case study of the decision making deficiencies identified during this event will be developed and will be presented to appropriate personnel. Additional actions include cleaning each of the annubar flow elements on both unit RCFCs and recalibrating the SX flow instruments to ensure correct flow rates are provided.

**F. Previous Occurrences:**

There have been no similar Licensee Event Report events at Braidwood Station.

In February 2002, Braidwood Station had a lake precipitation event that affected the non-essential service water system (WS) [KG] but not the SX system.

**G. Component Failure Data:**

<u>Manufacturer</u>	<u>Nomenclature</u>	<u>Model</u>	<u>Mfg. Part Number</u>
N/A	N/A	N/A	N/A