

Exelon Generation Company, LLC
Byron Station
4450 North German Church Road
Byron, IL 61010-9794

www.exeloncorp.com

August 3, 2010

LTR: BYRON 2010-0090

10 CFR 50.73

File: 1.10.0101

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

Byron Station, Unit 2
Facility Operating License No. NPF-66
NRC Docket No. STN 50-455

Subject: Licensee Event Report 2010-002-00, "Essential Service Water System Inoperable Due to Inadequate Seismic Restraint from Original Construction Error"

The enclosed Licensee Event Report (LER) is being submitted in accordance with 10 CFR 50.73, "Licensee event report system." The LER involves the discovery of inadequate seismic restraint of the safety related Essential Service Water Lines attached to a non-safety related Containment Ventilation Chiller.

There are no regulatory commitments contained in this letter. Should you have any questions concerning this submittal, please contact Mr. David Gudger, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,



Daniel J. Enright
Site Vice President
Byron Station

Enclosure: LER Number 2010-002-00

JE22
NRR

NRC FORM 366 (9-2007)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB: NO. 3150-0104 Estimated burden per response to comply with this mandatory collection request: 80 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 an 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.		EXPIRES: 08/31/2010						
<h2 style="margin: 0;">LICENSEE EVENT REPORT (LER)</h2> <p style="margin: 5px 0 0 40px;">(See reverse for required number of digits/characters for each block)</p>												
1. FACILITY NAME Byron Station, Unit 2					2. DOCKET NUMBER 05000455		3. PAGE 1 of 3					
4. TITLE Essential Service Water System Inoperable Due to Inadequate Seismic Restraint from Original Construction Error												
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	
06	04	10	2010	002	00	08	03	2010	Byron Station, Unit 1		05000454	
									FACILITY NAME		DOCKET NUMBER	
9. OPERATING MODE <div style="text-align: center; font-size: 24px;">1</div>		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)										
10. POWER LEVEL <div style="text-align: center; font-size: 24px;">100</div>		<div style="display: flex; flex-wrap: wrap;"> <div style="width: 25%;"> <input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi) </div> <div style="width: 25%;"> <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B) </div> <div style="width: 25%;"> <input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input checked="" type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D) </div> <div style="width: 25%;"> <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER </div> </div> <p style="font-size: 0.8em; margin-top: 5px;">Specify in Abstract below or in NRC Form 366A</p>										
12. LICENSEE CONTACT FOR THIS LER												
FACILITY NAME David Gudger, Regulatory Assurance Manager									TELEPHONE NUMBER (Include Area Code) 815-406-2800			
13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT												
CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX			
14. SUPPLEMENTAL REPORT EXPECTED								15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE)								<input type="checkbox"/> NO		11	09	10
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)												
<p>On February 3, 2010, Engineering identified that the support rails for Unit 2 A and B Containment Ventilation (VP) Chillers were not welded to their base plates in accordance with design requirements. The VP Chillers are non-safety related and isolated from Essential Service Water (SX) during a design basis accident. This design installation discrepancy causes increased loading on the attached SX lines (and consequently may impact the safety function of both trains of SX) during a Safe Shutdown Earthquake (SSE) event. The initial operability assessment concluded, based on engineering judgment, that installed supports and bolting were adequate to restrain the VP Chillers sufficiently to consider the attached SX piping operable. A detailed engineering assessment of this condition continued while welding the VP Chillers' support rails to their base plates. The welding of the support rails to the base plates was completed at approximately 2100 hours on February 3, 2010. The detailed engineering assessment continued in order to determine the historical operability status of the SX system. On June 4, 2010, an engineering assessment, using simplified methodologies, concluded the SX lines attached to the VP Chillers would not have satisfied permanent design or interim operability requirements. Further analysis, using more sophisticated techniques, will be pursued to continue to assess the operability of the SX system and the potential safety significance. The cause was determined to be an installation oversight during the initial construction in the early 1980's timeframe and not identifying the defect since installation. An extent of condition review of Chillers was conducted and all were found to have their required welds in place. In addition, a review of non-safety related components that may provide physical support to safety related components was completed. No additional concerns were identified.</p>												

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Byron Station, Unit 2	05000455	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2010	- 002 -	00	

NARRATIVE

A. Description of Event

On February 3, 2010, Engineering identified that the support rails for Unit 2 A and B Containment Ventilation (VP) [BK] Chillers were not welded to their base plates in accordance with design requirements. Although the VP Chillers are non-safety related and isolated from Essential Service Water (SX) [BI] piping during the design basis accident, they are considered anchor points for the attached safety related SX system piping. During a postulated Safe Shutdown Earthquake (SSE) event, this installation discrepancy impacts the loading on the attached SX lines. Since SX supplies the Ultimate Heat Sink (UHS) [BS], which is a shared system between Unit 1 and Unit 2, the safety function of both trains of SX and the UHS on each Unit could be impacted during a postulated SSE.

Shift Management was immediately notified and the issue was entered into the Corrective Action Program. The initial operability assessment concluded, based on engineering judgment, that installed supports and bolting were adequate to restrain the VP Chillers sufficiently to consider the attached SX piping operable. A detailed engineering assessment of this condition continued while welding the VP Chillers' support rails to their base plates. Sufficient welding of the support rails to the base plates was completed at approximately 2100 hours on February 3, 2010. The detailed engineering assessment continued in order to determine the historical operability status of the SX system.

On June 4, 2010, an engineering assessment, using simplified methodologies, was completed and concluded the SX lines attached to the VP Chillers would not have satisfied permanent design or interim operability requirements. Further analysis, using more sophisticated techniques, will be pursued to continue to assess the operability of the SX system and the potential safety significance.

At this time, this condition is being conservatively reported in accordance with 10 CFR 50.73 (a)(2)(ii)(B), for being in an unanalyzed condition that significantly degraded plant safety. Other reporting requirements may apply after the completion of the engineering assessment and will be addressed in a supplement to this report.

B. Causes of the Event

The cause was determined to be an installation oversight during initial construction in the early 1980's timeframe and not detecting the defect since installation. The cause of this oversight is indeterminate.

C. Safety Significance

There were no actual safety consequences from this condition. Byron Station has not experienced any significant seismic activity to challenge the SX piping attached to the VP chillers since initial startup. The potential safety significance of the condition is still being evaluated and the results will be reported in a supplement to this report.

D. Corrective Actions

The support rails of the Unit 2 A and B VP Chiller were welded to their base plates in accordance with appropriate design requirements.

An extent of condition review of other Chillers was conducted and all were found to have their required welds in place.

In addition, a review of non-safety related components that may provide physical support to safety related components was completed. No additional concerns were identified.

**LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Byron Station, Unit 2	05000455	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
		2010	- 002 -	00	

NARRATIVE

E. Previous Occurrences

LER 454 2008-001-00, "Technical Specification Non-Compliance of Containment Sump Monitor Due to Improper Installation During Original Construction." Corrective actions for this event would not have reasonably led to the discovery of this condition.