Exelon Generation

Byron Generating Station
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April 10, 2014

LTR: BYRON 2014-0042
File: 1.10.0101

United States Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Byron Station, Units 1 and 2
Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and 50-455

Subject: Licensee Event Report (LER) 454-2014-002-00, "Non-Compliance with Technical Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits"

Enclosed is Byron Licensee Event Report (LER) No. 454-2014-002-00 regarding the Byron Station non-compliance with Technical Specification 3.4.3, "RCS Pressure and Temperature (P/T) Limits" for RCS Reactor Coolant System (RCS) piping vacuum fill below the PTLR boundary of zero psig. This condition is reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications."

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

Respectfully,

Faber A. Kearney
Site Vice President
Byron Nuclear Generating Station

FAK/GC/sg

Enclosure: LER 454-2014-002-00

cc: Regional Administrator – NRC Region III
NRC Senior Resident Inspector – Byron Nuclear Power Station

NRC FORM 366 (02-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

1. FACILITY NAME	2. DOCKET NUMBER	3. PAGE
Byron Station, Unit 1	05000454	1 OF 3

4. TITLE

Non-Compliance with Technical Specification 3.4.3 - RCS Pressure and Temperature (P/T) Limits

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
02	19	2014	2014	002	00	04	21	2014	Byron Station, Unit 2	05000455
									FACILITY NAME: N/A	DOCKET NUMBER: N/A

9. OPERATING MODE: 1

10. POWER LEVEL: 100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: *(Check all that apply)*

☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☐ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
☐ 20.2203(a)(2)(vi)	☒ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT	TELEPHONE NUMBER (Include Area Code)
Steven A Gackstetter – Manager, Byron Regulatory Assurance	(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
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	MONTH	DAY	YEAR
☐ YES *(If yes, complete 15. EXPECTED SUBMISSION DATE)* ☒ NO				

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

On February 19, 2014, it was determined that the Byron Station has not complied with Technical Specifications (TS) 3.4.3, "RCS Pressure and Temperature (P/T) Limits," between March 2011 and October 2013, during start-up of the plant following plant refueling outages. Byron TS 3.4.3 Limiting Condition for Operation (LCO) states that "RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR." During previous Reactor Coolant System (RCS) vacuum fill operations at Byron Station Unit 1 and Unit 2, RCS pressure exceeded the Pressure and Temperature Limits Report (PTLR) P/T curve lower bound in that the P/T curve does not indicate a limit below 0 psig. This TS non-compliance is reportable in accordance with 10 CFR 50.73(a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications".

The cause of operation outside of the P/T curve limits is the application of an inadequate operating procedure that allowed the P/T lower pressure bound to be exceeded during RCS fill operations.

RCS fill pressures below the P/T curve lower bound did not affect the integrity of the RCS system.

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

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 FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to Infocollects.Resource@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.

LICENSEE EVENT REPORT (LER) CONTINUATION SHEET

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Byron Station, Unit 1	05000454	2014	- 002 -	00	2 OF 3

NARRATIVE

A. Plant Condition Prior to Event

Event Date/Time: February 19, 2014 / 1200 hours CST
Unit 1 - Mode 1 - Power Operations, Reactor Power 100 percent
Unit 2 - Mode 1 - Power Operations, Reactor Power 100 percent
Reactor Coolant System [AB]: Normal operating temperature and pressure.

B. Description of Event

On February 19, 2014, it was determined that the Byron Station has not complied with Technical Specifications (TS) 3.4.3, "RCS Pressure and Temperature (P/T) Limits," between March 2011 and October 2013, during start-up of the plant following plant refueling outages. Byron TS 3.4.3 Limiting Condition for Operation (LCO) 3.4.3 states that "RCS pressure, RCS temperature, and RCS heatup and cooldown rates shall be maintained within the limits specified in the PTLR." The applicability is "At all times". At Byron Station, the PTLR is contained in the Technical Requirements Manual (TRM) and not in the TS.

During previous Reactor Coolant System (RCS) vacuum fill operations at Byron Station Unit 1 and Unit 2, RCS pressure exceeded the Pressure and Temperature Limits Report (PTLR) P/T curve lower bound in that the P/T curve does not indicate a limit below 0 psig. The Byron PTLR for both units contains P/T curves providing acceptable regions of reactor coolant system (RCS) operation. The lower pressure bound on the P/T curves is zero pounds per square inch gauge (psig) pressure. During RCS vacuum fill and vent operations, as allowed by Byron operating procedures, portions of the RCS have experienced vacuum conditions of up to negative 14 psig. This is outside the lower bound of the P/T curve and is not in compliance with the TS 3.4.3 requirement.

C. Cause of Event

The cause of operation outside of the P/T curve limits is the application of an inadequate operating procedure that allowed the P/T lower pressure bound to be exceeded during vacuum fill operations. Contributing to this was an inadequate 10 CFR 50.59 evaluation performed in support of a 1998 revision to the same operating procedure to allow vacuum refill of the RCS.

D. Safety Significance

Westinghouse Engineering analysis concluded that vacuum refill of the RCS in Mode 5 does not violate the 10 CFR 50, Appendix G pressure and temperature requirements for the Reactor Vessel (RV). Furthermore, the NRC-approved methodologies contained in Westinghouse WCAP-14040 do not preclude the P/T limits from being revised to include a pressure less than 0 psig. Therefore, the PTLR can be revised to change the lowest pressure value in the P/T limit curve figures and data tables from 0 psig to either 0 psia or -14.7 psig (without considering instrument uncertainties) due to vacuum refill of the RCS. Therefore, the safety significance of this issue is considered low.

E. Corrective Actions

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NARRATIVE

The Byron Unit 1 and Unit 2 PTLR documents have been revised and implemented in support of the Byron Unit 1 spring 2014 refueling outage and the Byron Unit 2 fall 2014 refueling outage.

F. Previous Occurrences

There have been no previous occurrences of this nature in the previous three years.