



Byron Generating Station

4450 North German Church Rd
Byron, IL 61010-9794

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November 30, 2015

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2.07.0100 (5A.108)

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

Byron Station, Unit 1
Facility Operating License No. NPF-37
NRC Docket No. STN 50-454

Subject: Licensee Event Report (LER) 454-2015-006-00, "Byron Unit 1, Mode 3
Entered with Turbine Trip Safety Function Disabled Due to Safety Related
Relay Leads Lifted"

Enclosed is Byron Station Licensee Event Report (LER) No. 454-2015-006-00 regarding Byron Station Unit 1 entering Mode 3 with the Turbine Trip Safety Function Disabled due to Safety Related Relay Leads Lifted. This condition is reportable in accordance with 10 CFR 50.73(a)(2)(v)(D) for any event or condition that could have prevented the fulfillment of a safety function to mitigate the consequences of an accident, and under 10 CFR 50.73(a)(2)(i)(B) for any operation or condition which was 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. Douglas Spitzer, Regulatory Assurance Manager, at (815) 406-2800.

Respectfully,

A handwritten signature in black ink, appearing to read "Mark E. Kanavos".

Mark E. Kanavos
Site Vice President
Byron Generating Station

MEK/GC/sg

Enclosure: LER 454-2015-006-00

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



LICENSEE EVENT REPORT (LER)

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

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.

1. FACILITY NAME Byron Station, Unit 1	2. DOCKET NUMBER 05000454	3. PAGE 1 OF 3
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4. TITLE
Mode 3 Entered with Turbine Trip Safety Function Disabled due to Safety Related Relay Leads Lifted

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
10	01	2015	2015	006	00	11	30	2015	N/A	N/A
									N/A	N/A

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

3	<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)
0	<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 checked="" type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

LICENSEE CONTACT Douglas Spitzer – Manager, Byron Regulatory Assurance	TELEPHONE NUMBER (Include Area Code) (815) 406-2800
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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**

YES (If yes, complete 15. EXPECTED SUBMISSION DATE) NO

MONTH	DAY	YEAR

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

On October 1, 2015 at 0906, while in Mode 3, Byron Station determined that Unit 1 was in a condition that could have prevented fulfillment of the turbine trip safety function. Electrical leads had been lifted to disable the turbine trip function on both Solid State Protection System (SSPS) trains while Unit 1 was in Mode 5 to support Instrument Maintenance calibrations on turbine generator throttle valves and governor valves. These leads were not re-installed prior to Mode 3 entry, which occurred at 0059 on October 1, 2015. From the time Mode 3 was entered, Byron Unit 1 was not in compliance with Byron technical specification (TS) 3.3.2, "ESFAS Instrumentation," Condition G.

This event is being reported under 10 CFR 50.73(a)(2)(v)(D) for any event or condition that could have prevented the fulfillment of a safety function to mitigate the consequences of an accident, and under 10 CFR 50.73(a)(2)(i)(B) for any operation or condition which was prohibited by the plant's technical specifications. This LER is being submitted in follow-up to ENS 51436 made on October 1, 2015.

The cause of the event was the Exceptions Checklist, 1BGP 100-1T3, " Mode 4 to 3 Checklist," utilized for mode changes, lacks the appropriate rigor to ensure exceptions are resolved and challenged prior to removal from the list.



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

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.

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NARRATIVE

A. Plant Condition Prior to Event

Event Date/Time: October 01, 2015 / 0059 hours CST

Unit 1 - Mode 3

The Reactor Coolant System (RC) [AB] was at Normal Operating Pressure. No structures, systems, or components were inoperable at the start of this event that contributed to the event.

B. Description of Event

On October 1, 2015 at 0906, while in Mode 3, Byron Station determined that Unit 1 was in a condition that could have prevented fulfillment of the turbine trip safety function. Electrical leads had been lifted to disable the turbine trip function on both Solid State Protection System (SSPS) trains while Unit 1 was in Mode 5 to support Instrument Maintenance calibrations on turbine generator throttle valves and governor valves. These leads were not re-installed prior to Mode 3 entry, which occurred at 0059 on October 1, 2015. From the time Mode 3 was entered, Byron Unit 1 was not in compliance with Byron technical specification (TS) 3.3.2, "ESFAS Instrumentation," Condition G.

When Unit 1 was in Mode 5 on September 29, 2015, leads were lifted for both K640A and K640B Engineered Safety Features (ESF) relays during planned performance of the Turbine Generator Throttle Valve calibration activities per Byron maintenance procedure BISR 3.1.10-212, "Calibration of Digital Electro Hydraulic (DEH) SERVO Controls and Main Turbine Throttle Valves." The requirement to re-land the K640 leads was entered into the 'Discrepancy/Comment' section of procedure 1BGP 100-1T3, "Mode 4 to 3 Checklist." This is contrary to normal practice in which the as-left is the same as the as-found or a signature is required by a licensed Senior Reactor Operator who approves of the deviation. Additional surveillances were performed on the turbine system requiring the K640A and K640B leads to be lifted between September 29, 2015 and October 1, 2015. These included turbine overspeed network checks, throttle valve stroke time tests, and governor valve calibrations.

The K640A and K640B ESF relays provide the turbine trip function for each SSPS train. At the conclusion of the calibration, the Instrument Maintenance Department (IMD) First Line Supervisor (FLS) directed the IMD technicians to not re-install the leads for K640A and K640B. This was permissible per the IMD procedure which states, "At the discretion of FLS, the leads in steps 5.5 and 5.6 may remain disconnected if a procedure that requires the same leads to be lifted is to be performed directly after the completion of this procedure." While the IMD FLS did inform a licensed Senior Reactor Operator (SRO) of the condition, there was no specific sign-off for an SRO to allow defeating this safety function for multiple shifts in the procedure. Consequently, the mode change exception that was entered on the mode change checklist for this issue did not specify the source document (e.g. specific TS requirement and function) for the exception.

On October 01, 2015 at 0036, the Shift Manager and Unit Supervisor determined the leads did not need to be landed prior to entering Mode 3. They granted permission for Unit 1 to enter Mode 3, incorrectly assessing that the K640A and K640B leads were not required to be re-landed. On October 01, 2015 at 0059, Unit 1 actually entered Mode 3 with the turbine trip function disabled. This condition was prohibited by TS since Byron TS 3.3.2, condition G does not allow two trains of Turbine Trip automatic actuation relays to be disabled at the same time. On October 01, 2015 at 0906, the MCR became aware by the crew questioning status of the lifted leads as indicated by the Equipment Status Tag control board that the plant configuration did not comply with Tech Spec 3.3.2 in the current Mode. Both K640A and K640B leads were lifted and the Turbine Trip Function was disabled

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

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NARRATIVE

in the mode in which it was required. The crew entered TS Limiting Condition for Operation (LCO) 3.0.3 due to a condition prohibited by TS. Turbine valve testing was stopped and leads were re-landed on K640A and K640B.

This event is being reported under 10 CFR 50.73(a)(2)(v)(D) for any event or condition that could have prevented the fulfillment of a safety function to mitigate the consequences of an accident, and under 10 CFR 50.73(a)(2)(i)(B) for any operation or condition which was prohibited by the plant's technical specifications. This LER is being submitted in follow-up to ENS 51436 made on October 1, 2015.

C. Cause of Event

The cause of the event was the Exceptions Checklist, 1BGP 100-1T3, utilized for mode changes, lacks the appropriate rigor to ensure exceptions are resolved and challenged prior to removal from the list. The SRO who signed off 1BGP 100-1T3 did not recognize the correlation between LCO 3.3.2 and K640A/B. This placed one person in knowledge space and was not challenged by the team. If a peer check was performed, it is likely the other SRO would have identified that this condition was prohibited by Tech Specs.

D. Safety Significance

This event is not considered risk significant. A quantitative risk analysis was performed and determined that online risk remained green and there was no change in the unit risk level.

E. Corrective Actions

Byron Station Operations will revise all 1/2BGP 100-1 series mode change related checklists for both units to require a peer check, a more rigorous process for documenting and removing mode change exceptions and to document the specific TS function in the applicable Mode Change Checklist.

F. Previous Occurrences

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