

Commonwealth Edison Company  
Byron Generating Station  
4450 North German Church Road  
Byron, IL 61010-9794  
Tel 815-234-5441

**ComEd**

February 25, 1998

LTR: BYRON 98-0060  
FILE: 3.03.0800 (7.10.0101)

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, D.C. 20555

Dear Sir:

The Enclosed Licensee Event Report from Byron Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(2)(i).

This report is number 98-001; Docket No. 50-454.

Sincerely,

*K. I. Kofron*

K. I. Kofron  
Station Manager  
Byron Nuclear Power Station

KLK/MS/js

Enclosure: Licensee Event Report No. 98-001

cc: A. B. Beach, NRC Region III Administrator  
NRC Senior Resident Inspector  
INPO Record Center  
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NRC FORM 366 (4-95)		U.S. NUCLEAR REGULATORY COMMISSION		APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98	
<b>LICENSEE EVENT REPORT (LER)</b> (See reverse for required number of digits/characters for each block)					
FACILITY NAME (1)  BYRON NUCLEAR POWER STATION, UNIT 1				DOCKET NUMBER (2)  05000454	PAGE (3)  1 OF 4
TITLE (4)  Failure to Test ESF Logic Circuit due to Oversight by Initial Technical Specification Reviewers					
EVENT DATE (5)		LER NUMBER (6)		REPORT DATE (7)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
02	02	98	98	-- 001 --	00
				MONTH	DAY
				02	25
				YEAR	
				98	
				OTHER FACILITIES INVOLVED (8)	
				FACILITY NAME	DOCKET NUMBER
				Byron Station, Unit 2	05000455
				FACILITY NAME	DOCKET NUMBER
					05000
OPERATING MODE (9)		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (Check one or more) (11)			
5		<input type="checkbox"/> 20.2201(b) <input checked="" type="checkbox"/> 2. 3(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(viii)			
POWER LEVEL (10)		<input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(x)			
0.00		<input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(3)(iii) <input type="checkbox"/> 50.73(a)(2)(iii) <input type="checkbox"/> 73.71			
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> OTHER			
		<input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 50.36(c)(1) <input type="checkbox"/> 50.73(a)(2)(v)    Specify in Abstract below or in NRC Form 366A			
		<input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.73(a)(2)(vii)			
LICENSEE CONTACT FOR THIS LER (12)					
NAME				TELEPHONE NUMBER (Include Area Code)	
David Baran, System Engineer				815-234-5441 X 2050	
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)					
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPROS	
SUPPLEMENTAL REPORT EXPECTED (14)					EXPECTED SUBMISSION DATE (15)
YES (If yes, complete EXPECTED SUBMISSION DATE).					MONTH DAY YEAR
<input checked="" type="checkbox"/> NO					

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

On 2-2-98, Byron Station discovered that contacts have never been tested to ensure they can energize the Safeguards Actuation Relays (SARs) for the Engineered Safety Feature (ESF) Actuation (EF)(JE) systems while a Unit 1 bus is cross-tied to a Unit 2 bus for Station Auxiliary Transformer (SAT) power.

In previous years, both units were cross-tied multiple times. Contact testing was satisfactorily completed on the contacts of Unit 1 on 2-17-98.

The cause of this event was an oversight by the personnel reviewing the Technical Specification for surveillance requirements prior to start-up of either unit. The safety of the plant and the public was not affected by this event. The ESF system was not challenged during any periods of cross-tie configuration.

Corrective actions are System Engineering will test the reserve ESF contacts in Unit 2, and the Operating Department will revise/write any necessary surveillances to test the contacts and revise all SAT cross-tie procedures to reference the new surveillances.

Four previous occurrences were found where testing of equipment was not performed in accordance with Technical Specifications. None of the previous corrective actions would have prevented this event. This event is reportable per 10CFR50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.



NRC FORM 366A (4-95)		U.S. NUCLEAR REGULATORY COMMISSION			
<b>LICENSEE EVENT REPORT (LER)</b> <b>TEXT CONTINUATION</b>					
FACILITY NAME (1)	DOCKET	LER NUMBER (6)			PAGE (3)
BYRON NUCLEAR POWER STATION, UNIT 1	05000454	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 4
		98	-- 001	-- 00	

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

**A. PLANT CONDITIONS PRIOR TO EVENT:**

Event Date/Time      02-02-98 / 0800

Unit 1 Mode   - 5 Cold Shutdown      Rx Power 0.00%      RCS [AB] Temperature/Pressure Atmospheric

Unit 2 Mode   - 1 Power Operation      Rx Power 99.7%      RCS [AB] Temperature/Pressure NOT/NOP

**B. DESCRIPTION OF EVENT:**

In response to Nuclear Regulatory Commission (NRC) Generic Letter 96-01, Testing of Safety-Related Logic Circuits, Requested Action 1, Byron Station has been comparing electrical schematic drawings and logic diagrams for various safety related systems against plant surveillance procedures. This review is intended to ensure that all portions of the circuitry are adequately tested in the surveillance procedures to fulfill the Technical Specification requirements.

In the fall of 1996, ComEd initiated a review of Byron Station Technical Specification testing requirements by an offsite organization. Potentially untested contacts have been identified by this initial review. Byron Site personnel are performing a detailed, systematic site evaluation to make a final determination as to whether the contacts are tested in any site surveillance and to determine appropriate follow-up actions.

On 2-2-98, Byron Station determined that a set of three contacts had never been tested to ensure the contacts can energize the train A Safeguards Actuation Relay (SAR) while Bus 141 is cross-tied to Bus 241. These contacts are used during cross-tying Unit 1 train A to Unit 2 for Station Auxiliary Transformer (SAT) power for the Engineered Safety Feature (ESF) Actuation (EF)[JE] systems. The contacts in Unit 1, train B, and both trains of Unit 2 had never been tested to ensure they will energize the associated SAR relays while the two units are cross-tied.

The four sets of three contacts are not associated with the normal off-site circuit configuration to a 4KV ESF Bus, but are associated with a reserve configuration. The normal configuration provides offsite power to each ESF bus from its dedicated SAT. The reserve configuration provides offsite power from the opposite unit's SATs. Contacts associated with the normal configuration are tested, as required, on a quarterly basis.

Byron Unit 1 was cross-tied in June 1994 and June 1996, Byron Unit 2 was cross-tied in October 1996. Both units have also been cross-tied multiple times prior to 1994. During the cross-tie evolutions, Byron was in non-conformance with Technical Specification 3/4.3.2 by relying on logic circuits that had not been tested to ensure the circuits would operate the SAR relays.

Testing of the affected circuits for Unit 1 was completed on 2-17-98. The contacts performed satisfactorily during testing.

This event is reportable per 10 CFR 50.73(a)(2)(i)(B), any operation or condition prohibited by the plant's Technical Specifications.

**C. CAUSE OF EVENT:**

During initial review of the Technical Specifications, prior to the start-up of either unit, testing of the cross-tie logic path was overlooked. This was an oversight by the personnel reviewing the Technical Specification surveillance requirements. The cause classification was a cognitive personnel error.

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

D. SAFETY ANALYSIS:

The safety of the plant and the public was not affected by this event. The ESF system was not challenged during the time the unit buses were cross-tied. Emergency equipment required by a safety injection would sequence on the ESF Bus in the event of a failure of the SAR relay. Additionally, Byron Emergency Operating Procedure, 1/2BEP-0, Reactor Trip/Safety Injection, verifies required equipment is running and provides direction for operators to manually start the equipment if it is not running. If any of the logic circuit testing fails, Technical Specification actions will be followed.

E. CORRECTIVE ACTIONS:

- System Engineering has written Special Procedures and tested the reserve feed contacts in Unit 1. Action complete.
- System Engineering will test the reserve feed contacts in Unit 2. NTS #454-180-98-SCAQ00001-01.
- Operating Department will write/revise any necessary surveillances to test the contacts. NTS #454-180-98-SCAQ00001-02.
- Operating Department will revise all SAT cross-tie procedures to verify ESF logic contacts have been tested. NTS #454-180-98-SCAQ00001-03.

F. RECURRING EVENTS SEARCH AND ANALYSIS:

Searched Byron Regulatory Assurance database "RABY" using key words, "Inadequate and Testing" and "Missed Surveillance". The following were found during the searches. Only LERs were considered in the search.

LER 454/93-001, "Wiring Error in SSPS Test Circuit on 3 of 4 Trains"

A wiring problem in the SSPS system resulted in a portion of the SSPS system not being tested. The cause of the event is due to the manufacturers incorrect wiring of the cabinet prior to delivery. The corrective action from this event would not have prevented this event.

LER 454/97-009, "Missed Technical Specification Surveillance"

This LER was written because the station was not venting the CV pump casing and discharge piping high points outside of containment once every 31 days, as required by Technical Specifications. One of the corrective actions requires a review of selected Technical Specification surveillances for literal compliance. This action would not have prevented this event because it is not completed.

LER 454/97-010, "Faulty Review Causes Failure to Test Relays and Technical Specification 3.0.3 Entry"

The letdown containment isolation valve slave relay contacts and the letdown orifice block valve relay contacts were not tested on a quarterly basis. The cause for this event was a deficient Onsite Review that allowed Electrical jumpers to be used to prevent closure of the valves. The corrective action included a review of selected surveillances for Technical Specification compliance. The corrective actions from this event would not have prevented this event.



LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

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BYRON NUCLEAR POWER STATION, UNIT 1	05000454	98	-- 001	-- 00	4 OF 4

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

F. RECURRING EVENTS SEARCH AND ANALYSIS (cont.)

LER 454/97-014, "Testing of P-11 Permissive Missed Due to Inadequate Procedure"

Verification of the associated Solid State Protection System input relays does not properly check the P-11 input relays. Because of the deficiency, a valid test of the entire channel was not met. One of the corrective actions was for the Instrument Maintenance Department to revise their procedures. The corrective action from this event would not have prevented this event.

G. COMPONENT FAILURE DATA:

There was no equipment failure.