



Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61011

March 24, 1993

LTR: BYRON 93-0160
FILE: 3.03.0800 (1.10.0101)

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)(B).

This report is number 93-002; Docket No. 50-454.

Sincerely,

G.K. Schwartz
Station Manager
Byron Nuclear Power Station

GKS/CW/mw

Enclosure: Licensee Event Report No. 93-002

cc: A. Bert Davis, NRC Region III Administrator
NRC Senior Resident Inspector
INPO Record Center
CECo Distribution List

300044

9303300249 930325
PDR ADDCK 05000454
S PDR
(0991R/VS-6)

IF22
11

LER Number
454: 93-002

Title of Event: VO Valves Failed to Close as Required during a Technical Staff Surveillance

Occurred: 02-26-93/ 0949
Date Time

Acceptance by Station Review:

W. K. Lin, 3/24/93
OE Date

J. L. Lee, 3/24/93
TSS Date

L. Smith, 3/24/93
RAS Date

_____, _____
OTHER Date

Approved by: G. K. Schwartz, 3/25/93
Station Manager Date

LICENSEE EVENT REPORT (LER)

Form Rev 2.0

Facility Name (1) Byron, Unit 1										Docket Number (2) 0 5 0 0 0 4 5 4					Page (3) 1 of 0 4					
Title (4) VQ Valves Failed to Close as required during a Technical Staff Surveillance																				
Event Date (5)			LER Number (6)					Report Date (7)			Other Facilities Involved (8)									
Month	Day	Year	Year	///	Sequential Number	///	Revision Number	Month	Day	Year	Facility Names		Docket Number(s)							
											None		0 5 0 0 0							
0 2	2 6	9 3	9 3		0 0 2		0 0	0 3	2 5	9 3			0 5 0 0 0							
OPERATING MODE (9)			THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)																	
6			20.402(b)					20.405(c)					50.73(a)(2)(iv)					73.71(b)		
POWER LEVEL (10)			20.405(a)(1)(i)					50.36(c)(1)					50.73(a)(2)(v)					73.71(c)		
0			20.405(a)(1)(iii)					50.36(c)(2)					50.73(a)(2)(vii)					Other (Specify in Abstract below and in Text)		
			20.405(a)(1)(iii) X					50.73(a)(2)(i)					50.73(a)(2)(viii)(A)							
			20.405(a)(1)(iv)					50.73(a)(2)(ii)					50.73(a)(2)(viii)(B)							
			20.405(a)(1)(v)					50.73(a)(2)(iii)					50.73(a)(2)(x)							
LICENSEE CONTACT FOR THIS LER (12)																				
Name Mike Ryterski										Ext. 2379					TELEPHONE NUMBER					
															AREA CODE					
															8 1 5 2 3 4 - 5 4 4 1					
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																				
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRI'S	///	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRI'S	///									
				N	///						///									
SUPPLEMENTAL REPORT EXPECTED (14)												Expected Submission Date (15)		Month		Day		Year		
Yes (If yes, complete EXPECTED SUBMISSION DATE)												X NO								

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 8, 1993, Technical Staff procedure BVP 600-3, Unit One - Placing Both Trains of SSPS in Test Mode While in Modes 5 and 6, was performed as scheduled during refueling outage B1R05. This procedure installed and labeled several jumpers in Solid State Protection System (SSPS) cabinets. Core alterations resumed on 02-25-93 and Technical Staff performed 1BVS 9.9-1, Unit 1 Containment Ventilation System Auto Isolation Weekly Surveillance, on 02-26-93 as required by Technical Specification 3/4.9.9. On 02-26-93 at 0944, with Unit 1 in Mode 6 (refueling), the Train B valves failed to actuate when the Train B portion of the surveillance was performed. The surveillance failure was investigated and it was discovered a jumper required to be installed by BVP 600-3 was lifted and taped. The jumper was dislodged by an unknown individual sometime after 1BVS 9.9-1 was completed on 02-20-93. This event was not detected and the configuration of the hook at the end of the jumper indicated the lead was most likely not lifted intentionally due to it's bent shape.

An Instrument Maintenance Department Control System Technician (CST) was shocked from this lifted jumper on 02-21-93 during unrelated work in the SSPS system. The CST left the jumper in the lifted state, taped the bare end, and notified his supervisor. The length of the jumper, the supervisor's concern with the worker's safety, and unexpected results during performance the CST's assigned Nuclear Work Request package contributed to this event.

New jumpers with ring end clips and specific lengths were made for future use with this procedure. Nuclear Tracking System items were written to address procedure revisions and to discuss this event with affected departments.

This event is reportable under 10CFR50.73(a)(i)(b) for operations prohibited by the Technical Specifications.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION												Form Rev 2.0	
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)					
		Year	Sequential Number	Revision Number									
Byron, Unit 1	015000454	93	-	002	-	00	02	OF	04				
TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]													

A. PLANT CONDITIONS PRIOR TO EVENT:

Event Date/Time 02-26-93 / 0944

Unit 1 MODE 6 - Refueling Rx Power N/A RCS [AB] Temperature/Pressure 80°F / 0 psig

B. DESCRIPTION OF EVENT:

On February 8, 1993, Technical Staff and the Electrical Maintenance Department performed Technical Staff procedure BVP 600-3, Unit One - Placing Both Trains of SSPS in Test While in Modes 5 and 6, as scheduled by the Unit 1 refueling outage (B1R05) schedule. This procedure lifted and labeled several leads and installed and labeled several jumpers in Solid State Protection System (SSPS) cabinets 1PA09J and 1PA10J to maintain the automatic valve actuation of the Containment Purge (VQ) and Boron Dilution Protection System (BDPS) operable while both trains of SSPS are in TEST. Technical Staff surveillance 1BVS 9.9-1, Unit 1 Containment Ventilation System Auto Isolation Weekly Surveillance, and Operating surveillance 1BOS 1.2.7.d-1, Unit 1 Boron Dilution Protection System Flux Doubled Valve Switchover Surveillance, were performed on 02-08-93 after BVP 600-3 was installed to verify all jumpers and lifted leads were performed correctly. 1BVS 9.9-1 was performed successfully on 02-13-93 and on 02-20-93 after core offload was completed.

The Instrument Maintenance Department began work on the Logic B test switch in SSPS cabinet 1PA10J under Nuclear Work Request (NWR) B95934 on 02-19-93. This NWR required complete removal and replacement of the Logic B test switch and a point to point continuity check as a post installation test. The test switch was reinstalled on 02-20-93 and the point to point continuity check was started on 02-21-93. During this continuity check, an Instrument Maintenance Department Control System Technician (CST) was shocked from a lifted lead in cabinet 1PA10J. This lead was taped and the continuity testing was completed 02-23-93.

Core alterations resumed on 02-25-93 and Technical Staff performed 1BVS 9.9-1 on 02-26-93 as required by Technical Specification 3/4.9.9. All Train A VQ valves actuated as required during the surveillance. On 02-26-93 at 0944, with Unit 1 in Mode 6 (refueling), the Train B valves failed to actuate when the Train B portion of the surveillance was performed. All Train B VQ valves were immediately closed and Limiting Condition for Operation Action Requirement (LCOAR) 1BOS 9.9-1a was entered. The surveillance failure was investigated and it was discovered a jumper required to be installed by BVP 600-3 (jumper at TB506-1) was lifted and taped. It was later discovered this was the same lead which shocked the CST on 02-21-93. The jumper was relanded, the Train B test was successfully completed, and the LCOAR was exited.

This event is reportable under 10CFR50.73(a)(i)(b) by failing to comply with the Technical Specification action statement of immediately closing the VQ valves when the automatic function of the containment radiation monitoring instrumentation was disabled by the lifted jumper.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION												Form Rev 2.0	
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)					
		Year		Sequential Number		Revision Number							
Byron, Unit 1	0 5 0 0 0 4 5 4	9 3	-	0 0 2	-	0 0	0 3	OF	0 4				

TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

C. CAUSE OF EVENT:

A root cause analysis was performed for this event and several items were identified. The jumper landed at TB06-1 in 1PA10J was dislodged by an unknown individual prior to shocking the CST on 02-21-93 but after IRVS 9.9-1 was completed on 02-20-93. This event was not detected and the configuration of the hook at the end of the jumper indicated the lead was most likely not lifted intentionally due to it's bent shape. The back of panel 1PA10J is a small area where many people worked during the Logic B test switch replacement so the jumper could have been dislodged without detection. The length of the jumper was also longer than required so extra wire hung in the cabinet opening which made it easier for it to become dislodged.

The CST was shocked by the dislodged jumper on 02-21-93. The CST left the jumper in the lifted state, taped the bare end, and notified his supervisor. The CST also recorded this event on his turnover notes and discussed it with other department personnel during his turnover. The CST and his supervisor did not realize the wire was a jumper installed as part of BVP 600-3. The work on the Logic B test switch lasted several days over several shifts. It involved many wires and the job itself was not common so a wire lifted with 120VAC was not considered an unusual event. The CST's attention also was diverted by an unexpected result during performance of his assigned Nuclear Work Request package. The supervisor was concerned with the safety of the CST and not as to why the lead was lifted.

D. SAFETY ANALYSIS:

The containment isolation function of the redundant Train A radiation monitor (1RT-AR011) was operable at all times during this event. The Train A monitor would have performed its intended safety function if a high radiation event would have occurred during the time the Train B containment ventilation isolation function was inoperable. Core offload was completed on 02-20-93 so the time period core alterations were in progress with the Train B containment isolation function inoperable was from the time core alterations resumed on 02-25-93 to the time the jumper was reinstalled on 02-26-93 (approximately 22 hours).

E. CORRECTIVE ACTIONS:

New jumpers with ring end clips and specific lengths were made for future use during the installation of BVP 600-3, Unit One - Placing Both Trains of SSPS in Test While in Modes 5 and 6, and BVP 600-4, Unit Two - Placing Both Trains of SSPS in Test While in Modes 5 and 6. Nuclear Tracking System (NTS) items 4541809300200-01 and 4541809300200-02 will track procedure revisions to BVP 600-3 and BVP 600-4 to specify the correct routing and length of the installed jumpers. NTS item 4541809300200-03 will track a procedure revision to Byron Administrative Procedure, BAP 330-2, Temporary Alterations, to discuss using the correct length jumpers if installed long term and to discuss the correct routing of installed jumpers. NTS item 4541809300200-04 will track discussing this event with Technical Staff, Instrument Maintenance, and Electrical Maintenance to review the long term installation of jumpers and to reiterate the need for a questioning attitude.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION														Form Rev 2.0	
FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						Page (3)							
		Year	///	Sequential	///	Revision									
				Number		Number									
Byron, Unit 1	0 5 0 0 0 4 5 4	9 3	-	0 0 2	-	0 0	0 4	OF	0 4						

TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

F. RECURRING EVENTS SEARCH AND ANALYSIS:

a) EVENT SEARCH (DIR, LER)

No similar occurrences were identified.

b) INDUSTRY SEARCH (OPEX's NPRDS)

None found.

c) NWR

B95934

d) ANALYSIS

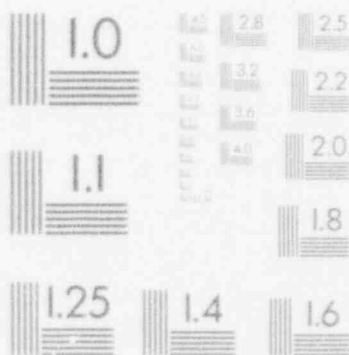
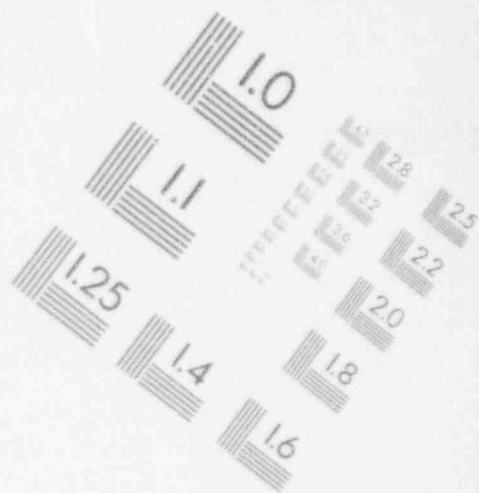
None.

G. COMPONENT FAILURE DATA:

<u>MANUFACTURER</u>	<u>NOMENCLATURE</u>	<u>MODEL</u> <u>NUMBER</u>	<u>MFG PART</u> <u>NUMBER</u>
---------------------	---------------------	-------------------------------	----------------------------------

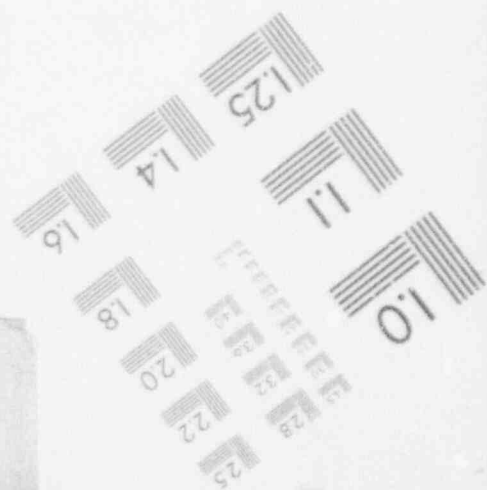
Not Applicable.

IMAGE EVALUATION
TEST TARGET (MT-3)



150mm

6'



1

IMAGE EVALUATION TEST TARGET (MT-3)

