



Commonwealth Edison
Byron Nuclear Station
4450 North German Church Road
Byron, Illinois 61010

April 12, 1994

LTR: BYRON 94-0147
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)(v).

This report is number 94-003; Docket No. 50-454.

Sincerely,

G.K. Schwartz
Station Manager
Byron Nuclear Power Station

GKS/DSK/ng

Enclosure: Licensee Event Report No. 94-003

cc: J. Martin, NRC Region III Administrator
NRC Senior Resident Inspector
INPO Record Center
CECo Distribution List

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SIGNATURE PAGE FOR LICENSE EVENT REPORT

LER Number
454: 94-003

Title of Event: Auxiliary Feedwater Isolation Valve Exposure to Potentially Harsh Environment Due to Flood Seal Removal

Occurred: 03-14-94 / 12:30
Date Time

OSR DISCIPLINES REQUIRED: ABC

Pan / 4/13/94
SES DATE

Acceptance by Station Review:

M. [Signature] / 4-13-94
OE ABCFG Date

[Signature] / 4/13/94
SES Date

[Signature] / 4/13/94
RAS Date

_____/_____
OTHER Date

Approved by: [Signature] / 4-13-94
Station Manager Date

LICENSEE EVENT REPORT (LER)

FACILITY NAME BYRON NUCLEAR POWER STATION	DOCKET NUMBER 0 5 0 0 0 4 5 4	PAGE 1 OF 0 4
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TITLE
AUXILIARY FEEDWATER ISOLATION VALVE EXPOSURE TO POTENTIALLY HARSH ENVIRONMENT DUE TO FLOOD SEAL REMOVAL

EVENT DATE			LER NUMBER			REPORT DATE			OTHER FACILITIES INVOLVED				
MONTH	DAY	YEAR	YEAR	SEQ. NUMBER	REVISION	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)		
0 3	1 4	9 4	9 4	0 0 3	0 0	0 4	1 3	9 4	BYRON, UNIT 2		0 5 0 0 0 4 5 5		

OPERATING MODE: 1

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 5: (CHECK ONE OR MORE OF THE FOLLOWING)

POWER LEVEL 0 9 9	20.402(b)	20.405(e)	50.73(a)(2)(iv)	73.71(b)
	20.405(a)(1)(ii)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
	20.405(a)(1)(iii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 386A)
	20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(A)	
	20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(viii)(B)	

LICENSEE CONTACT FOR THIS LER

NAME LAUREL ZECH, LICENSING GROUP LEADER, EXT. 2825	TELEPHONE NUMBER 8 1 5 2 3 4 5 4 4 1
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED	EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES, (If yes, complete EXPECTED SUBMISSION DATE)	<input type="checkbox"/> NO	0 7	1 3	9 4

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

On 03/14/94, the design bases of the Flood Seal Openings (FSO) located between the Main Steam Tunnel (MS)[SB] and the Auxiliary Feedwater (AF)[BA] Tunnel was questioned since these flood seal openings have been occasionally removed during operation to allow access to the AF tunnel. Byron Station's Safety Evaluation Report (SER) states that the flood seal opening plates between the Main Steam tunnel and the Auxiliary Feedwater tunnel separate equipment in the AF tunnel from the environment created in the event of a main steamline break (MSLB) in the MS safety valve room or steam pipe tunnel and ensure a watertight environment in the AF tunnel in the event of turbine building flooding due to a circulating water pipe break. The AF isolation valves in the AF tunnel are not in the Equipment Qualification (EQ) Program since the environment is considered mild, and therefore, since they have not been analyzed for a harsh environment they cannot be relied upon to mitigate consequences of an event occurring while the FSO plates are removed. However, the plates have been removed for periods of time during plant operations which exposed the equipment in the AF tunnel to potentially harsh environments.

Immediate corrective actions included verifying that the AF tunnel FSO plates were in place on both units and requiring the FSO plates to remain in place until this issue has been evaluated and acceptable resolution achieved.

This event is reportable per 10CFR50.73(a)(2)(v) any condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

FACILITY NAME BYRON NUCLEAR POWER STATION	DOCKET NUMBER 0500045494	LER NUMBER			PAGE	
		YEAR	SEQ. NUMBER	REVISION	OF	PAGES
		94	- 003	- 00	02	04

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

A. PLANT CONDITIONS PRIOR TO EVENT:

Event Date/Time 03-14-94 / 12:30

Unit 1 MODE 1 - Power Operation Rx Power 99% RCS [AB] Temperature/Pressure NOT/NOP

Unit 2 MODE 1 - Power Operation Rx Power 99% RCS [AB] Temperature/Pressure NOT/NOP

B. DESCRIPTION OF EVENT:

On 03/14/94, during a review of plant documentation following a routine plant walkdown, an operator noted that the Updated Final Safety Analysis Report (UFSAR) identifies a maximum normal temperature for the auxiliary feedwater (AF) [BA] tunnel of 100 degrees F and a maximum accident temperature of 419 degrees F for the main steam (MS) [SB] tunnel. The difference in the temperature values prompted the operator to question what allowed removal of the FSO plates during operation since they provide the isolation between the MS tunnel and the AF tunnel. These plates have been removed for periods of time during power operations to accommodate maintenance and surveillance activities in the AF tunnel (see Attachment A) in accordance with Byron Administrative Procedures in existence since 1985. The equipment located in the AF tunnel, both trains of steam generator (SG) AF isolation valves (1/2AF013A through H) and supporting electrical equipment, is not included in the Environmental Qualification (EQ) Program since the AF tunnel is considered a mild environment.

Upon further investigation by Regulatory Assurance, it was determined on 03/29/94 that closure of the FSO plates is required for compliance with General Design Criteria (GDC) 4. As documented in the Byron SER and SSER-2, the FSO plates are relied upon to separate equipment in the AF tunnel from the environment created in the event of a main steamline break (MSLB) in the MS safety valve room or steam pipe tunnel and to ensure a watertight environment in the AF tunnel in the event of turbine building flooding due to a circulating water pipe break. As noted above, the equipment in the AF tunnel is not in the EQ Program, and therefore, since they have not been analyzed for a harsh environment they could not be relied upon to mitigate consequences of an event occurring while the FSO plates are removed. Specifically, the AF isolation valves in the AF tunnel may not provide isolation of a faulted SG following exposure to the environment created by a MSLB or flooding event. Reportability consistent with 10CFR50.72, a condition which alone could have prevented the fulfillment of a safety function needed to mitigate the consequences of an accident, was determined at 1430 CST on 03/29/94. NRC was notified via the Event Notification System of this condition at 1510 CST (1610 EST) on 03/29/94. At the time of notification, all AF tunnel FSO plates were in place.

This event is reportable per 10CFR50.73(a)(2)(v) any condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to mitigate the consequences of an accident.

C. CAUSE OF EVENT:

The removal of the flood seals was performed in accordance with our current procedures; however, the bases for removal of the flood seal openings during operation requires further investigation. A Root Cause investigation is in progress. The results of this investigation will be reported in a supplemental LER.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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BYRON NUCLEAR POWER STATION	05000454	94	-003	-00	03	OF 04

TEXT Energy Industry Identification System (EIS) codes are identified in the text as (XX)

D. SAFETY ANALYSIS:

The safety consequences of this event were minimal. During the time periods when the FSO plates were removed, no incidence of MSLB or turbine building flooding occurred. Had such an event occurred, current Byron Emergency Operating Procedures address alternate equipment and methods which could have been used to provide isolation of AF to the steam generators, if needed.

Electrical cable for equipment other than the AF isolation valves passes through the AF tunnel, but no safety related terminations for these cables are present in the tunnel. The cables are qualified and purchased to the same specifications as other safety related cable used in harsh environmental applications. Since the plant cable qualification envelopes the MS tunnel conditions during a MSLB, there would be no adverse affects on the cable in the AF tunnel should an event occur while the FSO plates are removed.

E. CORRECTIVE ACTIONS:

Immediate corrective actions included verifying that the AF tunnel FSO plates were in place on both units and requiring the FSO plates to remain in place until this issue has been evaluated and acceptable resolution achieved. Additionally, the AF tunnel FSO plates were tagged to alert personnel to not remove them without Shift Engineer approval.

Activities currently in progress to determine appropriate long term corrective actions include the following:

1. Evaluation of ability to qualify/document other equipment available to achieve isolation of the SGs in the event of a MSLB in the steam tunnel with the AF tunnel FSO plates removed.
2. Evaluation of an appropriate time period for which the FSO plates can be removed for maintenance and surveillance activities without significantly increasing the risk of core damage and/or offsite release.
3. Evaluation of procedural enhancements based on results of 1 and 2.

The above activities are being tracked via commitments 454-180-94-00300-01 through 03 respectively. When final corrective actions are determined, a supplemental report will be submitted (454-180-94-00300S1).

F. RECURRING EVENTS SEARCH AND ANALYSIS:

SOER 85-05 and NRC Information Notices No. 87-49 and No. 92-52 addressed industry flooding concerns. Byron responded with administrative controls and training related to the flood seals. These actions are not directly related to the concerns in this event.

An event concerning design inadequacy of the AF discharge isolation valves was reported as Byron LER 90-012. This inadequacy rendered the AF013 valves potentially incapable of being closed within the specified time frames of the analysis for a MSLB inside containment. Although the condition was different than considered in this LER (94-003), the corrective actions, enhancing procedures to provide alternatives to operators for isolating flow to a faulted steam generator, served to mitigate consequences of the current event.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

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

G. COMPONENT FAILURE DATA:

No component failure occurred during this event.

Attachment A
History of AF Tunnel Flood Seal Opening Plate Removal
for previous 12 months (03/29/93 - 03/29/94)

<u>DATE REMOVED</u>	<u>DATE REPLACED</u>	<u>REASON FOR REMOVAL</u>
11/17/92	04/27/93	Flood seal #1-9 removed for EM surveillance.
01/29/93	04/27/93	Flood seal #1-7 removed to support outage activities.
01/29/93	04/27/93	Flood seal #1-8 removed to support outage activities.
03/09/93	03/29/93	Flood seal #2-8 removed for EM surveillance.
05/25/93	05/29/93	Flood seal #2-8 removed.
06/21/93	07/07/93	Flood seal #1-8 removed for EM access to Unit 1 Tunnel.
07/13/93	07/16/93	Flood seal #2-8 removed for EM access to AF Tunnel.
08/24/93	09/02/93	Flood seal #1-8 removed for access to AF Tunnel.
09/01/93	10/25/93	Flood seal #2-8 removed.
10/13/93	10/19/93	Flood seal #1-8 removed for inspection support.
11/15/93	02/23/94	Flood seal #1-8 removed for EM access to AF Tunnel.
12/15/93	03/14/94	Flood seal #2-8 removed for Teledyne surveillance.
03/16/94	03/25/94	Flood seal #2-8 removed to inspect pipe hangers.
03/16/94	03/25/94	Flood seal #1-8 removed to inspect/repair AF line pipe hangers.