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

# **Com**Ed

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May 15, 1998

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LTR: BYRON 98-0158 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)(iv).

This report is number 98-004; Docket No. 50-455.

Sincerely,

K. L. Korren

Station Manager Byron Nuclear Power Station

KLK/MS/js

Enclosure: Licensee Event Report No. 98-004

cc: A. B. Beach, NRC Region III Administrator NRC Senior Resident Inspector INPO Record Center ComEd Distribution List



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U.S. NUCLEAR REGULATORY COMMISSION 495) LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)								APPROVED BY OMB NO. 3150-0104 EXPIRES 04/30/98 ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS MANDATORY INFORMATION COLLECTION REQUEST: 50.0 HRS. REPORTED LESSONS LEARNED ARE INCORPORATED INTO THE LICENSING PROCESS AND FED BACK TO INCUSTRY, FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-5 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150- 0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.							
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BYRON NUCLEAR POWER STATION, UNIT 2								05000455				1 OF 3			
TITLE (4) FHB R	ad Mo	nitor ES	F Actu	ation due to	High Do	se Wat	er in F	uel Tr	ansfer	Canal					
EVE	T DAT	E (5)	[	LER NUMBER (	6)	REPO	RT DAT	E (7)	1	OTHER FACILITIES INVOLVED (8)					
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION	MONTH	DAY	YEAR	Byror	VITY NAME VITON Station, Unit 1			DOCKET NUMBER 05000454		
04	19	98	98	004	00	05	15	98	FACILITY NAME DOCKET NUMBER				mber 5000		
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POV	POWER LEVEL (10) 000		20.2203(a)(1)			20.2203(a)(3)(i)			50.73(a)(2)(ii)				50.73(a)(2		
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			20.2203(a)(2)(ii)			E0 36(c)(1)			×	50.73(a)(2)(v)			Specify in	Abstract below	
			20.2203(a)(2)(iii)			50.36(c)(2)				50.73(a)(2)(vii)			or in NRC Form 366A		
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-			COMP	LETE ONE LINE	FOR EAC	H COMPO	NENT	FAILUR	E DESCR	IBED IN	THIS REPORT	(13)			
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ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

During preparation for a Unit 2 core offload a valid Engineered Safety Feature (ESF) signal was received and processed by the Fuel Handling Building (FHB)[ND] Area Radiation (AR)[IL] monitors. The ESF signal to start the FHB Ventilation System, which was already in service, was generated when the sluice gate separating the Fuel Transfer Canal (FTC) and the Spent Fuel Pool (SFP) was opened. The radiation level in the FHB reached five millirem per hour. Elevated radiation levels were expected prior to opening the sluice gate because it was known that the water in the FTC was at a higher dose rate than the water in the SFP. The condition, which caused the water in the FTC to be at a higher dose rate, is reported in Licensee Event Report (LER) 05000455-98-003. This event is reported separately as an ESF actuation. This is classified as cause code X, other. Since this event was expected and initiated as a course of operations, no previous corrective actions would have been taken to prevent this event. Actions taken following this event consisted of monitoring dose rates in the FHB. The safety of the plant and the public was not affected by this event. This event is reportable under 10 CFR 50.73(a)(2)(iv).

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BYRON NUCLEAR POWER	STATION, UNIT 2	05000455	98	004 -	- 00	2	Ur	3

### A. PLANT CONDITIONS PRIOR TO EVENT:

Event Date/Time	04-19-98 / 2320									
Unit 1 Mode 1 - Power	Op Rx	Power - 99.8%	RCS [AB] Temperature/Pressure	NOT/NOP						
Unit 2 Mode 6 - Refuel	ing Rx	Power - 00.0%	RCS (AB) Temperature/Pressure	100 degrees F / 0 psig						

#### B. DESCRIPTION OF EVENT:

On 04/19/98 at 2320, during preparation for a Unit 2 core offload a valid Engineered Safety Feature (ESF) signal was received and processed by the Fuel Handling Building (FHB)[ND] Area Radiation (AR)[IL] monitors ORT-AR055/56. The ESF signal to start the Fuel Handling Building Ventilation System, which was already in service, was generated when the sluice gate separating the Fuel Transfer Canal (FTC) and the Spent Fuel Pool (SFP) was opened. The sluice gate was opened at 2311. At 2313, the monitors produced an alert (2.5 millirem per hour setpoint). And at 2320, the monitors alarmed "Hi Rad" (5.0 millirem per hour setpoint). The radiation level in the FHB reached five millirem per hour. Elevated radiation levels were expected prior to opening the sluice gate because it was known that the water in the FTC was at a higher dose rate than the water in the SFP. The safety of the plant and the public was not affected by this event. This event is reportable under 10 CFR 50.73(a)(2)(iv) for any event or condition that resulted in a manual or automatic actuation of any engineered safety feature (ESF).

#### C. CAUSE OF EVENT:

During the B2R07 refueling outage a routine and preplanned hydrogen peroxide addition was initiated to perform a "crud burst" on the Reactor Coolant System (RCS)[AB]. Cleanup following this "crud burst" was insufficient. During the reactor cavity fill, crud was apparently stirred up and due to the radioactive particles suspended in the water, the radiation levels in the cavity increased (see LER 05000455-98-003). Since the valve (2FH001) between the cavity and the FTC was open, the radiation levels in the FTC also increased.

On 4/19 at 2311, when the sluice gate between the FTC and the SFP was opened the higher dose rate water mixed with the lower dose rate water due to natural flow and circulation. Either this homogenous mixture or a stirring of "crud" created radiation levels that rapidly reached the "Hi Rad" setpoint for the AR monitors (the high radiation alarm was received nine minutes later, at 2320). The radioactive particles suspended in the water created "shine" off the water causing the FHB AR monitors to alarm and generate the ESF actuation signal.

The condition, which caused the water in the FTC to be at a higher dose rate than the water in the SFP, is reported in Licensee Event Report (LER) 05000455-98-003. This event is reported separately as an ESF actuation. This is classified as cause code X, other.

Data gathering (logs) and reviews, Event and Causal Factor Charting, and Interviewing were used during this investigation.

NRC FORM 366A (4 95) LICENSEE EVENT TEXT CON	TREPORT (L	ER)	U.S. NUCLEAR	REGULAT	ORY C	COMMIS	SION
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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. Although the ESF signal to start the Fuel Handling Building Ventilation System was valid, the ventilation system was already in service. The radiation level in the FHB reached five millirem per hour. The elevated radiation levels were expected prior to opening the sluice gate because it was known that the water in the FTC was at a higher close rate than the water in the SFP. Had the dose rate in the FHB been higher, actions taken would have been the same.

#### E. CORRECTIVE ACTIONS:

Immediate actions:

Following appropriate Byron Annunciator Response (BAR) procedures, the Health Physicists were notified and FHB dose rates were monitored.

Corrective actions:

None.

Corrective actions to prevent recurrence:

None.

Corrective actions for the FTC water being higher in dose are discussed in LER 05000455-98-003.

## F. RECURRING EVENTS SEARCH AND ANALYSIS.

A recurring events search and analysis for the insufficient "crud burst" cleanup and resulting high dose water in the cavity and FTC will be included in LER 05000455-98-003. Since this event was expected and initiated as a course of operations, previous corrective actions taken would not have been expected to prevent this event.

#### G. COMPONENT FAILURE DATA:

None.