



PECO NUCLEAR

A Unit of PECO Energy

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October 9, 1998

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U. S. Nuclear Regulatory Commission
Washington, DC 20555

Docket No. 50-277

SUBJECT: Licensee Event Report, Peach Bottom Atomic Power Station Unit 2

This Licensee Event Report reports an Engineered Safety Feature actuation of the Reactor Water Cleanup system due to a high flow signal during system restoration.

Reference: Docket No. 50-277
Report Number: 2-98-006
Revision Number: 00
Event Date: 09/15/98
Discovery Date: 09/15/98
Report Date: 10/09/98
Facility: Peach Bottom Atomic Power Station
1848 Lay Road, Delta, PA 17314

Sincerely,

FCS:fcs

enclosure

cc: N. J. Sproul, Public Service Electric & Gas
R. R. Janati, Commonwealth of Pennsylvania
INPO Records Center
H. J. Miller, US NRC, Administrator, Region I
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CCN 98-14077

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APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001
Estimated burden per response to comply with this mandatory information collection request: 50 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 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. If 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.

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)
Peach Bottom Atomic Power Station Unit 2

DOCKET NUMBER (2)
05000 277

PAGE (3)
1 OF 4

TITLE (4)
Reactor Water Cleanup System Automatic Isolation

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 NAME	DOCKET NUMBER
9	15	98	98	006	00	10	09	98	FACILITY NAME	DOCKET NUMBER
										05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING	POWER LOWER (10)	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more) (11)			
1	61.9	20.2201(b)	20.2203(a)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
		20.2203(a)(1)	20.2203(a)(3)(ii)	50.73(a)(2)(ii)	50.73(a)(2)(x)
		20.2203(a)(2)(i)	20.2203(a)(3)(iii)	50.73(a)(2)(iii)	73.71
		20.2203(a)(2)(ii)	20.2203(a)(4)	X 50.73(a)(2)(iv)	OTHER
		20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC Form 336A
		20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER (12)

NAME George Lengyel	TELEPHONE NUMBER (Include Area Code) (717) 456-4115
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE.)	NO	EXPECTED	MONTH	DAY	YEAR
X					

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

On September 15, 1998, an automatic reactor water cleanup (RWCU) isolation occurred while placing the RWCU system in service. The RWCU system had been removed from service to perform maintenance on the service outlet valve 'E', CV-2-12-016A. While restoring the system, a RWCU isolation occurred from a 'Cleanup Recirculation Pump Suction Line Break' signal when the demineralizer by-pass valve, MO-2-12-074, was opened and an unexpected surge of water flowed through MO-2-12-074 pressurizing the piping downstream. The unexpected sudden flow was due to RWCU Dump Flow Control Valve, CV-2-12-055, leaking through and depressurizing the piping downstream of MO-2-12-074. The RWCU isolation completion was confirmed utilizing operating procedures and the isolation was reset. RWCU system integrity was verified and the system returned to service.

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

Requirements of the Report

This LER is being submitted in accordance with 10CFR50.73(a)(2)(iv) as a result of an automatic Engineered Safety Features (ESF) Reactor Water Cleanup system (RWCU) isolation.

Unit Conditions at Time of Discovery

Unit 2 was operating at 61.9 percent thermal reactor power (EISS:RCT) in an end-of-cycle coastdown. The RWCU (EISS:CE) system flow path was being established to the condenser for system warm-up. There were no other inoperable systems, structures or components that contributed to the event.

Description of the Event

On September 14, 1998, the RWCU system was removed from service per procedure SO 12.2.A-2, *Reactor Water Cleanup System Shutdown*, in preparation for a maintenance outage. Following maintenance, operators were aligning the system for warm-up in accordance with SO 12.1.A-2, *Reactor Water Cleanup System Startup for Normal Operations or Reactor Vessel Level Control*.

Per the procedure, the system was pressurized through the RWCU suction line isolation valves MO-2-12-015 and MO-2-12-018 to the RWCU Filter by-pass valve, MO-2-12-074. The next step was to slowly open the RWCU Filter By-pass valve, MO-2-12-074, to pressurize the piping between MO-2-12-074 and the dump flow control valve, CV-2-12-055. Operators proceeded cautiously in opening MO-2-12-074 by bumping the valve open for one second and waiting approximately ten seconds to observe the effect. During each bump the operator verified a slight increase in RWCU flow and a corresponding decrease to zero gpm, indicating flow had passed through MO-2-12-074, then stopped when the piping downstream was pressurized. After completing four repetitions of one second bumps, split indication was observed by the operator indicating the valve was 'cracked' open and the piping was pressurized, the operator initiated a full open signal to MO-2-12-074 at 14:03 on September 15, 1998. The RWCU system isolated on a 'Cleanup Recirculation Pump Suction Line Break' signal due to a high flow condition in the system.

After verifying the isolation was complete, operators reset the isolation at 14:08 hours. The RWCU system integrity was verified and returned to service, vessel to vessel with the 'B' demineralizer, at 23:11 hours.

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Cause of the Event

The cause of the event was a leaking RWCU dump control valve, CV-2-12-055, which allowed a depressurization of the line downstream of MO-2-12-074, in combination with sensitive flow instrumentation sensing a momentary high flow condition resulting in the Isolation logic being completed.

The RWCU suction line break isolation occurs at 125% of normal RWCU flow. The isolation has no time delay and is very easily actuated during valve manipulation that pressurizes depressurized piping.

The piping downstream of MO-2-12-074 was filled and pressurized due to the previous bumping of the MO-2-12-074 valve. However, the piping was not pressurized to 1000 psig due to the leakage past CV-2-12-55 to the main condenser. When MO-2-12-074 was opened, the flow spike due to the pressurization of the piping downstream of MO-2-12-074 was high enough to actuate the 125% flow signal.

An opportunity to recognize that CV-2-12-055 was leaking was not apparent to the reactor operator in the control room since pressure indication for the piping downstream of MO-2-12-074 was not available in the control room, and the leakage rate past CV-2-12-055 with MO-2-12-074 throttled was too low to indicate on the RWCU flow indicator.

Analysis of Event

No actual safety consequences resulted from the RWCU Isolation. The system had been out of service for a planned system maintenance outage and the isolation occurred during system restoration. The high flow signal is provided to detect a line break in the RWCU system; however a line break did not occur in this event. The RWCU Suction Line Break Isolation is an engineered safety feature to mitigate the consequences of a line break to ensure Off-site Dose Limits will not be exceeded. The isolation was reset and the RWCU system was returned to service.

Corrective Actions

Completed corrective actions include the following:

A procedure change was initiated to open MO-2-12-74 to the full open position while monitoring pressure locally to improve the probability of placing the system in service

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without an isolation. The RWCU system was successfully returned to service on September 15, 1998.

Future corrective actions include the following:

An action request was initiated to repair CV-2-12-055 during the current outage.

An evaluation request was initiated to evaluate the sensitivity of the RWCU instrumentation to prevent unnecessary trips due to valve operations that cause momentary flow perturbations through the RWCU system.

Previous Similar Events

A Unit 3 RWCU isolation occurred on August 20, 1998 due to unexpected repressurization of a demineralizer vessel reported in License Event Report 3-98-004.