



May 23, 2005

NRC-05-059  
10 CFR 50.73

U.S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555

Kewaunee Nuclear Power Plant  
Docket 50-305  
License No. DPR-43

Reportable Occurrence 2005-003-01

Reference: 1) Reportable Occurrence 2005-003-00 dated April 19, 2005

In accordance with the requirements of 10 CFR 50.73, "Licensee Event Report System," reference 1 provided a Licensee Event Report (LER) for reportable occurrence 2005-003-00.

The enclosure to this letter provides a supplemental report for this LER. Changes are as indicated on pages 1 and 2 of the LER.

Michael G. Gaffney  
Site Vice President, Kewaunee Nuclear Power Plant  
Nuclear Management Company, LLC

Enclosure (1)

cc: Resident Inspector, Kewaunee, USNRC  
Project Manager, Kewaunee, USNRC  
Administrator, Region III, USNRC  
INPO Records Center

FE22

**ENCLOSURE 1**

**LICENSEE EVENT REPORT (LER)  
2005-003-01**

**3 pages follow**

**LICENSEE EVENT REPORT (LER)**

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

Estimated burden per response to comply with this mandatory collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet email to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0066), Office of Management and Budget, Washington, DC 20503. If a means used to impose 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.

<b>FACILITY NAME (1)</b> Kewaunee Nuclear Power Plant	<b>DOCKET NUMBER (2)</b> 05000305	<b>PAGE (3)</b> 1 of 3
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**TITLE (4)**  
Inadvertent Reactor Protection Trip While Shutdown – Caused by Procedure Adherence Deficiencies and Inadequate Shift Management Oversight

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
02	20	2005	2005	-- 003 --	01	04	19	2005	FACILITY NAME	DOCKET NUMBER
<b>OPERATING MODE (9)</b>		<b>N</b>		THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR .: (Check all that apply) (11)						
<b>POWER LEVEL (10)</b>		<b>000</b>		20.2201(b)		20.2203(a)(3)(ii)			50.73(a)(2)(ii)(B)	50.73(a)(2)(ix)(A)
				20.2201(d)		20.2203(a)(4)			50.73(a)(2)(iii)	50.73(a)(2)(x)
				20.2203(a)(1)		50.36(c)(1)(i)(A)			50.73(a)(2)(iv)(A)	73.71(a)(4)
				20.2203(a)(2)(i)		50.36(c)(1)(ii)(A)		X	50.73(a)(2)(v)(A)	73.71(a)(5)
				20.2203(a)(2)(ii)		50.36(c)(2)			50.73(a)(2)(v)(B)	OTHER Specify in Abstract below or in NRC Form 366A
				20.2203(a)(2)(iii)		50.46(a)(3)(ii)			50.73(a)(2)(v)(C)	
				20.2203(a)(2)(iv)		50.73(a)(2)(i)(A)			50.73(a)(2)(v)(D)	
				20.2203(a)(2)(v)		50.73(a)(2)(i)(B)			50.73(a)(2)(vii)	
				20.2203(a)(2)(vi)		50.73(a)(2)(i)(C)			50.73(a)(2)(viii)(A)	
				20.2203(a)(3)(i)		50.73(a)(2)(ii)(A)			50.73(a)(2)(viii)(B)	

**LICENSEE CONTACT FOR THIS LER (12)**

<b>NAME</b> Robert Reynnells	<b>TELEPHONE NUMBER (Include Area Code)</b> (920) 388-8791
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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)**

<b>YES</b> (If yes, complete EXPECTED SUBMISSION DATE).	<b>X</b>	<b>NO</b>	<b>EXPECTED SUBMISSION DATE (15)</b>	<b>MONTH</b>	<b>DAY</b>	<b>YEAR</b>
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**ABSTRACT**

On February 20, 2005 while the Kewaunee Nuclear Power Plant (KNPP) was in the Intermediate Shutdown mode, an inadvertent Reactor Protection System (RPS) trip signal was initiated. The RPS signal was initiated when the Lo-Lo Level setpoint (17%) was reached in the "B" Steam Generator (SG). The low level condition occurred while cool-down operations were in progress with SG levels being maintained outside of the normal operating procedure control band.

Operating the plant during the cool-down evolution outside of procedure requirements and inadequate Supervisory/Management oversight of overall plant operations caused this event.

Corrective actions include the enhancement of procedure use and adherence expectations, with the documentation of these expectations recorded in an existing plant procedure. The Operations crews will be trained and assessed, regarding knowledge of the existing and enhanced procedure use and adherence expectations. Additionally, a simulator exercise will be conducted for each operating crew that reinforces the appropriate behavior required to conduct a plant cool down. The scenario for the simulator exercise will include the obstacles that were encountered during this event. Individual performance issues associated with this event have been addressed.

There were no plant or public health and safety consequences to this event. This report does not describe a safety system functional failure.

**LICENSEE EVENT REPORT (LER)**  
TEXT CONTINUATION

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)			PAGE (3)
Kewaunee Nuclear Power Plant	05000305	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
		2005	-- 003	-- 01	

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

**Event Description:**

On February 20, 2005, while the Kewaunee Nuclear Power Plant (KNPP) was in the Intermediate Shutdown mode, an inadvertent Reactor Protection System (RPS) [JC] reactor trip signal was initiated. The RPS signal was initiated when the Lo-Lo Level setpoint (17%) was reached in the "B" Steam Generator (SG) [SG]. The low level condition occurred while cool-down operations were in progress with SG levels being maintained outside of the normal operating procedure control band.

On February 19, 2005, a plant shutdown was initiated due to the plant's Auxiliary Feedwater (AFW) system [BA] being declared inoperable due to a previously reported system protection design deficiency. The plant shutdown was completed at 0509 hours on February 20, 2005

Subsequent to performing required Hot Shutdown mode surveillance tests and completing plant system preparations for establishing Cold Shutdown conditions, a plant cool-down was initiated at 1111 hours on February 20, 2005. Plant cool-down is accomplished by steaming the SGs and maintaining secondary water inventory with the AFW system. Prior to the level trip, until just shortly before the actual signal was generated, only one AFW Pump [P] was being used to maintain SG level.

Prior to and at the onset of the cool-down evolution, Control Room [NA] operators were experiencing difficulties maintaining SG levels within the procedure-required operating band of 30% to 50%. Attempting to maintain SG inventory by use of only one AFW pump complicates maintaining level control. When only one AFW pump is used to maintain SG inventory, the operator has little control over how much flow can be directed to either of the plant's SGs when feeding both at one time. Consequently, if care is not taken to start a second pump soon enough, level control can be lost. In this event, corrective actions to start a second pump to replenish the depleting "B" SG inventory were not accomplished before the Lo-Lo level setpoint was reached.

During cool-down operations, using two motor [MO] driven AFW pumps provides better control of AFW feed flow to each SG. Each of the pumps has an air operated discharge flow control valve [FCV] whereby the Control Room operator can control the output flow of the associated AFW pump. KNPP's system design is such that the discharge piping of the motor driven AFW pumps can be cross-connected to allow one pump operation to feed both SGs. However, the cross-connect piping connection is downstream of the air operated flow control valves for the pumps. The cross-connect line between the two trains of piping to the SGs is isolable by closing either one or both of two motor operated valves from the Control Room.

In addition to the less than optimal AFW system alignment, other activities that were in process either aggravated the level control difficulties or distracted the on-shift crew. They include:

- Increasing secondary side SG blowdown flow to 50 gpm without notifying the Control Room operator.
- Allowing a SG level of 22%, which is lower than the normal control band limit of 30-50%.
- Attempting to recover from a pre-cool-down evolution that resulted in having to operate one of the SGs in an unusual condition.
- The Control Room Supervisor and Shift Manager were overly interactive with plant activities resulting in distraction from their primary oversight activities.

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		2005	-- 003	-- 01	

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

**Event Analysis:**

This event is being reported under 10CFR 50.73(a)(2)(iv)(A), an event that resulted in automatic actuation of the RPS. The RPS was actuated by the inadvertent initiation of a reactor trip signal when the Lo-Lo Level Setpoint was reached in the "B" SG. The plant had already been placed in a shutdown condition. Therefore, no actual reactor trip occurred.

There is no safety significance to this event. The reactor protection signal was not required to provide any plant or public health and safety need.

**Cause:**

A root cause evaluation of this event was conducted and determined that this event was attributed to failure to adhere to procedure requirements and inadequate Supervisory/Management oversight.

The operations crew exhibited a misapplication of procedure steps with the knowledge, endorsement, and direction of shift management. Additionally, the Shift Manager and Control Room Supervisor did not maintain appropriate crew oversight during a non-routine transient condition.

**Corrective Actions:**

1. Individual performance issues associated with this event have been addressed.
2. Procedure use and adherence expectations will be enhanced.
3. Operations crews will be trained and assessed, regarding knowledge of existing and enhanced procedure use and adherence expectations.
4. A simulator exercise will be conducted for each operating crew that reinforces the appropriate behavior required to conduct a plant cool down. The scenario for the exercise will include the obstacles that were encountered during this event.

**SIMILAR EVENTS**

None.