

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1): Perry Nuclear Power Plant, Unit 1
DOCKET NUMBER (2): 050004401 OF 04
PAGE (3): 1 OF 04

TITLE (4): Inappropriate Lineup of the Standby Liquid Control System During the Performance of a Surveillance Instruction Results in Both Trains Inoperable at the Same Time

EVENT DATE (5)			LER NUMBER (8)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (6)		
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES		DOCKET NUMBER(S)
08	12	88	88	02	9	09	09	88			050004401

OPERATING MODE (8): 1
POWER LEVEL (10): 090

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR § (Check one or more of the following) (11):

20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
20.405(a)(1)(iii)	50.38(a)(1)	X 50.73(a)(2)(v)	73.71(c)
20.405(a)(1)(iv)	50.38(a)(2)	X 50.73(a)(2)(vi)	OTHER (Specify in Abstract below and in Text, NRC Form 306A)
20.405(a)(1)(v)	50.73(a)(2)(i)	50.73(a)(2)(vii)(A)	
20.405(a)(1)(vi)	50.73(a)(2)(k)	50.73(a)(2)(vii)(B)	
20.405(a)(1)(vii)	50.73(a)(2)(iii)	50.73(a)(2)(v)	

LICENSEE CONTACT FOR THIS LER (12):
NAME: Gregory A. Dunn, Compliance Engineer, Extension 6484
TELEPHONE NUMBER: 216 259-3737

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13):

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC

SUPPLEMENTAL REPORT EXPECTED (14):
YES (if yes, complete EXPECTED SUBMISSION DATE): X NO
EXPECTED SUBMISSION DATE (15):

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

On August 12, 1988 at approximately 1604, the Standby Liquid Control (SLC) pump B suction manual isolation valve was inadvertently left in the closed position following the SLC pump B suction valve test portion of a surveillance instruction (SVI). This resulted in both trains of SLC being inoperable upon taking the A train out of service. The SLC system was in this configuration for approximately 80 minutes.

The cause of this event was personnel error. The Auxiliary Operators involved failed to fully complete each step of the SVI or verify that each step was fully complete prior to signing off the verification checklist. Contributing factors to these personnel errors were inadequate communication/teamwork skills, lack of sufficient supervision, and an improvable procedure.

As a result of this event, a counseling session will be held with the involved personnel, a management directive has been issued, the SVI will be revised, and other similar SVIs will be reviewed.

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		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER		
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TEXT (if more space is required, use additional NRC Form 268A's) (17)

On August 12, 1988 at approximately 1604, the Standby Liquid Control (SLC) [BR] pump B suction manual isolation valve [ISV] 1C41-F002B was inadvertently left in the closed position following the SLC pump [P] B suction valve test portion of a surveillance instruction (SVI). This resulted in both trains of SLC being inoperable upon taking the A train out of service. At the time of this event, the plant was in Operational Condition 1 (Power Operation) with reactor thermal power approximately 90 percent of rated and reactor vessel [RPV] pressure approximately 1000 psig.

On August 12, 1988 at 1343, the control room Supervising Operator authorized the start of SVI-C41-T2001, "SLC Pump and Valve Operability Test." One Auxiliary Operator (AO) was stationed at the Motor Control Center [MCC] in the Control Complex Building for operation of the SLC pump suction valves and two AOs were stationed inside containment for required local manual manipulations. The AO at the MCC had the working original of the SVI and was signing off the checklist. The AOs inside containment had a working copy and were following the steps in the body of the procedure but not signing off the checklist. All were equipped with radios in order to maintain communication.

During the restoration of the SLC pump B suction valve test portion of the SVI, the AO located at the SLC pumps progressed to the step which directed the closed valve 1C41-F002B to be locked open. It was then noticed that the valve had a broken locking wire and that no red locking devices were readily available. At this time the other AO inside containment was instructed to obtain additional locking wire and red locking devices. Concurrently, the AO at the MCC departed to the control room in order to obtain the necessary approval signatures for completion of that section of the SVI. He felt that based on the conversations he overheard on the radio, the AOs inside containment should have been complete by the time he had obtained any approval signatures. Therefore, in order to obtain the approval signatures for completion of that section, the AO inscribed his initials to the Sign-Off Verification Sheet indicating completion of all necessary steps.

At this point, the shift was at an end and it was felt that the SVI was at a convenient stopping place. Therefore, the Control Room Unit Supervisor gave permission to the AO to notify the other AOs inside containment that they could stop. Upon receiving the instruction to stop, the AO at the SLC pumps radio informed the AO obtaining the locking wire and devices that he could leave as soon as he returned. Red locking devices were obtained, but additional locking wire could not be located. The AO at the SLC pumps then proceeded to complete the last remaining step of that section of the SVI. The AOs inside containment then left the work place believing that all the steps were completed properly with the exception of an unlocked SLC pump B suction manual isolation valve 1C41-F002B.

At 1604, the next shift began the SLC pump A test with the B train of SLC still unknowingly inoperable due to valve 1C41-F002B being closed. Both trains of SLC were inoperable until 1744 (a total of 80 minutes) when the pump A test was complete and the A train declared operable. At approximately 1800, the pump B suction manual isolation valve was discovered in the closed position

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TEXT (if more space is required, use additional NRC Form 365A) (17)

after a discharge pressure could not be obtained during the SLC pump B test run. The system was immediately restored to its proper lineup and the surveillance test was completed at 1940.

Additionally, as part of the event investigation, on August 16, it was discovered that the performance of this surveillance instruction (SVI-C41-T2001) caused both trains of the SLC system to be inoperable. As part of the restoration following the operability test of the A or the B pump, the SLC pump A discharge manual isolation valve and the SLC pump B to test tank [TK] isolation valve are opened prior to closing the SLC pump discharge test tank throttle valve or the SLC pump discharge to test tank isolation valve. With this configuration a flow path exists from the discharge of both SLC pumps to the test tank which is vented to the containment atmosphere. If the SLC system was required to be initiated while in this line-up, the SLC pumps would discharge to the lower pressure test tank rather than inject to the reactor vessel. During routine performance of this SVI, the SLC system is lined-up in this configuration for less than 5 minutes.

The cause of the August 12 event was personnel error. The AOs involved failed to fully complete each step of the surveillance instruction or verify that each step was fully complete prior to signing off the verification checklist. Contributing factors to these personnel errors were inadequate communication/teamwork skills, lack of sufficient supervision, and an improvable procedure.

The cause of the problem identified on August 16 was an inadequate procedure. The SVI was written to prevent both SLC trains from being placed in an inoperable condition during the prerequisites, but was not written properly to prevent inoperability of both SLC trains during the restoration steps following the operability test of the A or the B pump. This deficiency existed for approximately 13 months.

The SLC system provides a backup method of shutting down the reactor, independent of the normal Control Rod Drive (CRD) system [AA] and the Alternate Rod Injection (ARI) portion of the Redundant Reactivity Control System [JC]. The SLC system is manually initiated from the main control room if the control room operator determines that the reactor cannot be shut down or kept shut down with the CRD system. Upon initiation, two full capacity positive displacement pumps inject a boron neutron absorber solution into the reactor. The Perry Safety Analysis Report has classified the probability of a transient occurring with a failure of the normal scram function (ignoring ARI) as extremely remote. In fact, such an event has never occurred. Additionally, the Perry Technical Specifications allows both trains of SLC to be inoperable for up to 8 hours. The CRD system, as well as the Reactor Protection System [JC], was available for scram functions during these events. Therefore, this event is considered to have no safety significance.

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TEXT (if more space is required, use additional NRC Form 365A's) (17)

A previous event similar to the one discovered on August 16, 1988 has been identified (see LER 87-033) in which the performance of SVI-C41-T2001 or SVI-C42-T2002 momentarily rendered both trains of SLC inoperable. This procedural deficiency identified in May, 1987 existed in the prerequisites, not the restoration as was the case in this event. The corrective actions in May, 1987 included revision of the subject SVIs and training to personnel responsible for surveillance review. The revisions properly resolved the deficiencies which existed within the prerequisites, however, the similar deficiency was inadvertently added to the restoration portions of the operability tests for the A and the B pumps.

As a result of this event, the following corrective actions have been or will be implemented.

1. A counseling session for the AOs involved in this event will be performed and will include:
 - The importance of repeat-back communication to verify that each step is performed.
 - The importance of strict procedural compliance such that each step is performed fully prior to proceeding.
 - The benefits associated with one team member taking lead responsibility when performing a surveillance.
 - The necessity to notify and consult supervision when difficulty is encountered in performing a task.
 - The importance of proper teamwork methods necessary to successfully perform such tasks.
2. A Management Directive has been issued to all Shift Supervisors reemphasizing their responsibility to ensure strict procedural compliance and to ensure that only the individual performing the procedural step signs the procedure indicating completion.
3. This event will be reviewed by all operators as part of the existing Requalification Training Program. The need for supervisory involvement before, during, and after task performance will be reemphasized.
4. SVI-C42-T2001 will be revised to require independent verification of proper system lineup prior to proceeding to the alternate train.
5. Regarding the procedural deficiency identified on August 16, the applicable SVIs will be revised to ensure that only one SLC train is rendered inoperable at a time during testing. Additionally, appropriate personnel responsible for surveillance revision and review have been made aware of the errors leading to this procedural deficiency.
6. A review of similar SVIs will be conducted to determine if the described deficiencies exist elsewhere. Revisions will be made accordingly.

Energy Industry Identification System Codes are identified in the text as [XX].



THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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Al Kaplan

VICE PRESIDENT
NUCLEAR GROUP

September 9, 1988
PY-CEI/NRR-0913 L

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
LER 88-029-00

Dear Sir:

Enclosed is Licensee Event Report 88-029-00 for the Perry Nuclear Power Plant.

Very truly yours,

Al Kaplan
Vice President
Nuclear Group

AK:sec

Enclosure: LER 88-029-00

cc: T. Colburn
K. Connaughton

U.S. Nuclear Regulatory Commission
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