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U.S. Nuclear Regulatory Commission
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DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT
LICENSEE EVENT REPORT 00-003 - INADVERTENT CLOSURE OF EMERGENCY DIESEL GENERATOR 1-1 OUTPUT BREAKER

Licensee Event Report (LER) 00-003 is attached. The LER describes a condition where the inadvertent closure of Emergency Diesel Generator 1-1 output breaker resulted in the automatic starting of both emergency diesel generators, the manual actuation of the reactor protection system and an auxiliary feedwater actuation. These Engineered Safety Feature (ESF) actuations are reportable to the NRC in accordance with 10 CFR 50.73(a)(2)(iv).

SUMMARY OF COMMITMENTS

This letter contains no new commitments and no revisions to existing commitments.

Douglas E. Cooper
Plant General Manager

CC Administrator, Region III, USNRC
Project Manager, NRR, USNRC
NRC Resident Inspector - Palisades

Attachment

IE22

NRC FORM 366 (6-1998) U.S. NUCLEAR REGULATORY COMMISSION

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)	DOCKET NUMBER (2)	PAGE (3)
CONSUMERS ENERGY COMPANY - PALISADES NUCLEAR PLANT	05000255	1 OF 4

TITLE (4)

INADVERTENT CLOSURE OF EMERGENCY DIESEL GENERATOR 1-1 OUTPUT BREAKER

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
04	04	2000	2000	-- 003	-- 00	05	04	2000		05000
									FACILITY NAME	DOCKET NUMBER
										05000

OPERATING MODE (9)	N
POWER LEVEL (10)	100

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

	20.2201(b)		20.2203(a)(2)(v)		50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		50.73(a)(2)(ii)		50.73(a)(2)(x)
	20.2203(a)(2)(i)		20.2203(a)(3)(ii)		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 366A
	20.2203(a)(2)(iv)		50.36(c)(2)		50.73(a)(2)(vii)		

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Sheri L. King, Sr. Technical Analyst	(616) 764-2036

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)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE).	X NO				

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

On April 4, 2000 at approximately 0620 hours with the plant operating at 99.9% power, an error by an auxiliary operator (AO) while attempting to rack-out the 2400 volt Emergency Diesel Generator 1-1 (EDG 1-1) output breaker 152-107, resulted in the EDG 1-1 output breaker being closed onto 2400 Volt Safeguards Bus 1-C with the EDG not in operation. The resultant voltage transient on the Safeguards Transformer and Bus 1-C led to the automatic starting of both emergency diesel generators, a manual reactor trip in accordance with operating procedures and an auxiliary feedwater actuation (AFAS).

The safety significance of this event was minimal. Applicable safety systems functioned as expected, and there was no damage to plant equipment caused by this event.

The automatic starting of both emergency diesel generators, the manual actuation of the reactor protection system and the auxiliary feedwater actuation are reportable to NRC in accordance with 10 CFR 50.73(a)(2)(iv) as Engineered Safety Feature (ESF) actuations.

EVENT DESCRIPTION

On April 4, 2000 at approximately 0620 hours with the plant operating at 99.9% power, an error by an auxiliary operator (AO) while attempting to rack-out the 2400 volt Emergency Diesel Generator 1-1 (EDG 1-1) [EK;DG] output breaker 152-107 [EB;BKR], resulted in the EDG 1-1 output breaker being closed onto 2400 Volt Safeguards Bus 1-C [EB;BU] with the EDG not in operation. The resultant voltage transient on the Safeguards Transformer [EB;XFMR] and Bus 1-C led to the automatic starting of both emergency diesel generators, a manual reactor trip [JC] in accordance with operating procedures and an auxiliary feedwater actuation (AFAS) [BA].

The automatic starting of both emergency diesel generators, the manual actuation of the reactor protection system and the AFAS are reportable to NRC in accordance with 10 CFR 50.73(a)(2)(iv) as Engineered Safety Feature (ESF) actuations.

ANALYSIS OF THE EVENT

Early in 'A' shift on April 4, 2000, the assigned AO was told that he would be implementing a tagging order to enable planned maintenance on the EDG 1-1. Later in the shift, a Nuclear Control Operator (NCO) gave the relevant tagging order to the assigned AO. A brief discussion was held on the Technical Specifications implications of the EDG 1-1 outage. No formal pre-job brief was conducted for what was considered to be a routine operations evolution. The assigned AO reviewed the tagging order and the procedure, and physically inspected the equipment in advance. No difficulties were expected; however, the assigned AO did request that another AO be present to serve as the cross-checker and ensure that work was performed on the correct components.

Upon arrival at the job site, the assigned AO correctly identified the breaker to be tagged. The assigned AO opened the cubicle and noted that he had never racked-out this style of breaker. In particular, he noted that the foot pedal of the breaker was positioned and angled differently from breakers on which he'd previously worked. He also realized he would need hooks to be able to hang the tags.

Following the arrival of a third AO with the hooks, the control power fuses were correctly pulled. When the assigned AO then tried to operate the breaker foot pedal release mechanism and pull the breaker out to the disconnect position, he was unable to do so.

In the trouble-shooting he subsequently conducted, the assigned AO noted that he had not received the same tactile and auditory feedback he had previously received on other breakers which would indicate the pedal had released the latch mechanism. He also incorrectly assumed that the charging spring indicator interfered with full pedal travel. The assigned AO remembered that the procedure required that the closing springs be discharged; however, he did not recall that this step followed removal of the breaker from

the cabinet. He concluded that by releasing the closing springs he would raise the indicator, thereby permitting the foot pedal to complete its travel to the disengaged position.

The assigned AO presented his conclusion and intention to act to the other two AOs at the job site. When neither of them objected, and despite the label next to the lanyard ring which states "Pull to Close Breaker," the AO proceeded to pull the lanyard ring, which closed the breaker to Bus 1-C. This action connected the EDG 1-1 to Bus 1-C, causing the EDG 1-1 to become a load, lowering safeguards transformer voltage, which started both diesel generators, and, at the same time, causing excess current flow which ultimately tripped the Bus 1-C supply breaker. The EDG 1-1 automatically started up with its breaker closed, and began to supply Bus 1-C independently. At this time, instrument AC power was momentarily lost due to the degraded voltage on Bus 1-C, resulting in a series of equipment changes in the plant, including the loss of both main feed pumps. At this point, the reactor was manually tripped from the Control Room in accordance with plant procedures. After the trip, the steam generator (SG) level lowered sufficiently to cause AFAS. All safety systems functioned as designed.

Following the event, the Plant General Manager directed the formation of an Incident Response Team. The team was directed to determine the apparent causes of the event, to assess their significance and to identify actions needed to support the return of the plant to service. A Condition Report was generated, assigned a Level One significance and a root cause investigation was initiated.

SAFETY SIGNIFICANCE

This event had minimal safety significance. Applicable safety systems functioned as expected. The bounding evaluation indicates that the conditional core damage probability (CCDP) for this event was 6.5E-7. This is below the safety significant threshold of 1E-6 and, therefore, is a non-safety significant event.

CAUSE OF THE EVENT

The assigned AO did not stop the tagging activity and obtain additional guidance when he recognized that the breaker did not respond as he had expected. Inadequate job planning and preparation and insufficient hands-on training on the differences between different styles of breakers were determined to be contributing causes.

CORRECTIVE ACTIONS

Several interim and remedial actions have been completed: all Operations crews were briefed on the importance of questioning whether or not an evolution is proceeding as expected and when to decide to stop and request help; hands-on training for this type breaker has been provided; and, a Senior Reactor Operator (SRO) is attending rack-out/rack-in evolutions involving 2400V and above breakers until specific operator training requirements for high voltage breakers have been defined and established. In addition, site-wide standdown meetings were held to discuss the event and lessons learned from the Incident Response Team investigation.

Further corrective actions to prevent recurrence are in progress and include: implementation of an improved behavioral monitoring program conducted by supervisors and managers to improve on-the-spot coaching and identify and correct obstacles which may be driving human errors; formal training for operating crews on error reduction techniques; and, creating specific guidelines on identifying evolutions which are to receive more extensive pre-job preparation.