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ACCESSION NBR: 8904130551 DOC. DATE: 89/04/04 NOTARIZED: NO DOCKET #
 FACIL: 50-388 Susquehanna Steam Electric Station, Unit 2, Pennsylv 05000388
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 RECIP. NAME RECIPIENT AFFILIATION

SUBJECT: LER 87-011-01: on 870924, common loads on 125 VDC battery not transferred, per procedure.

DISTRIBUTION CODE: IE22D COPIES RECEIVED: LTR 1 ENCL 1 SIZE: 6 W/8 ltr.
 TITLE: 50.73 Licensee Event Report (LER), Incident Rpt, etc.

NOTES: LPDR 1 cy Transcripts. 05000388/

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NOTES: 2 2

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LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) **Susquehanna Steam Electric Station - Unit 2** DOCKET NUMBER (2) **0 5 0 0 0 3 8 8** PAGE (3) **1 OF 0 5**

TITLE (4)
Common Loads on 125 VDC Battery were not Transferred per Procedure

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 NAMES		DOCKET NUMBER(S)																
0	9	2	4	8	7	8	7	0	1	1	0	1	0	4	0	4	8	9			0	5	0	0	0		

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

OPERATING MODE (8)	1	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
POWER LEVEL (10)	1 0 0	20.405(a)(1)(i)	50.36(c)(1)	50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	X 50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
R.R. Wehry, Power Production Engineer, Compliance	7 1 1 7 5 4 2 - 1 3 6 6 4

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS

SUPPLEMENTAL REPORT EXPECTED (14)

YES (If yes, complete EXPECTED SUBMISSION DATE) NO

EXPECTED SUBMISSION DATE (15)

MONTH	DAY	YEAR

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

On September 24, 1987 at 1905 hours, it was discovered that the loads which are common to Unit 1 and Unit 2 on 125 VDC Battery 1D640 had not been transferred to their Unit 2 source as is necessary when battery 1D620 capacity surveillance testing is performed. Unit 1 was in shutdown for refueling and Unit 2 was operating at 100% power. The test had begun on 9/22/87. Upon discovery, the common loads on 1D640 were transferred to their alternate sources on 9/24/87, except that an error in the operating procedure resulted in the 125VDC supply to "D" Diesel Generator not being properly transferred. This mis-alignment was discovered on 9/29/87 and was corrected.

The cause of this incident was attributed to personnel error and procedural inadequacies. The operating procedure errors were corrected. Additionally, the 18 month battery surveillance test procedures have been revised to require direct verification signoffs for transfer of the applicable 125 VDC loads during battery testing. An evaluation concluded that this incident had no effect on the health and safety of the public.

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		YEAR 8 7	SEQUENTIAL NUMBER 0 1 1	REVISION NUMBER 0 1			
					0 2	OF 0 5	

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

DESCRIPTION OF EVENT

On September 21, 1987 at 2345 hours, with Unit 2 operating at 100% power and Unit 1 shutdown for refueling, the Operations Section was requested by the Outage Coordination Group to support 125 VDC Battery (EIIS Code: EJ) 1D620 surveillance testing. The test to be run was SM-102-B03, 18 Month Channel "B" 1D620 - 125 VDC Battery Electrical Parameter Test and Inspection, Battery Service Discharge and Battery Charger Capability Test. The Operations Section stated that they would transfer the 1D620 loads which are common to Unit 1 and Unit 2 prior to authorizing the procedure and by 0340 hours on September 22, 1987, had transferred the common loads on 1D620 to their alternate (Unit 2) sources in accordance with operating procedure OP-102-002. Authorization was then given to perform SM-102-B03. A portion of the surveillance test procedure, which is similar to weekly battery checks not requiring authorization to perform, had been implemented prior to receiving authorization from Operations. Following authorization, Electrical Maintenance personnel commenced with the Battery Service Discharge portion of the surveillance procedure. A note which preceded this section stated that Operations should be notified to transfer 1D620 and 1D640 (Battery 1D) common loads to their alternate sources. Electrical Maintenance personnel assumed that Operations had transferred both 1D620 and 1D640 when in actuality, only 1D620 common loads had been transferred. Since this prerequisite to transfer both battery channels' common loads was only in the procedure as a NOTE, there was no verification signoff and thus, 1D640 common loads remained untransferred.

The error was discovered at 1905 hours on 9/24/87 when Electrical Maintenance was preparing to begin a similar surveillance test on the 1D640 battery. Operations personnel were dispatched to transfer the common loads on 1D640 to their alternate sources in accordance with operating procedure OP-102-002, Operation of 125 VDC Common Load Manual Transfer Switches. It was during this evolution that a second error occurred. An error in OP-102-002 incorrectly stated that prior to transferring the DC control power selector switches, the Control Mode switch at panel 0C519A should be placed in LOCAL and then, following the selector switch transfers, be returned to the REMOTE position. Panel 0C519A is the Diesel Generator (EIIS Code: EK) "A" Generator Control Panel located in the "A" Diesel Generator bay. The panel that should have been referenced in the procedure was 0C521D, the Diesel Generator "D" Engine Control Panel. The procedure as written led to the operations' personnel entry into the "A" Diesel Generator bay where they proceeded to transfer the "A" Diesel 125 VDC circuits to their alternate sources. The fact that there is only one Control Mode switch (LOCAL/REMOTE positions) in each bay, and the lack of Diesel bay identification in the OP-102-002 attachment, precluded the operators' discovery of the procedural error at that time. Thus, the Diesel Generator "D" 125 VDC circuits were not transferred to their alternate source as should have occurred. On 9/29/87 at 1230 hours, a Nuclear Safety Assessment Group (NSAG) Evaluator, during an inspection as a result of the initial failure to transfer the 1D640 loads, discovered the Diesel Generator "D" 125 VDC mis-alignment. The Evaluator notified the Operations Section who confirmed the mis-alignment and properly transferred the 125 VDC circuits on Diesel Generator "D" to their alternate sources at 1411 hours on 9/29/87.

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

CAUSE OF THE EVENT

This event was caused by procedural inadequacies and personnel error. The battery surveillance procedure, SM-102-B03, did not contain direct verification with signoffs for verifying that the common loads on Division II 125 VDC (Batteries 1D620 and 1D640) were transferred prior to commencing the service discharge portion of the test. This information was only contained in a note in the procedure which, as such, could more easily be overlooked. Also, because the Electrical Parameter Checks portion of the procedure was performed prior to receiving Operations' authorization to start SM-102-B03, the likelihood of missing the aforementioned note was increased.

The failure to properly transfer the Diesel Generator "D" 125 VDC common load circuits, after it was recognized that 1D640 common loads had not been transferred to their alternate source, was caused in part by a procedural error in OP-102-002, Operation of 125 VDC Common Load Manual Transfer Switches. The procedure's signoff attachment for the 1D common load transfer switches incorrectly identified panel 0C519A (Diesel "A" Generator Control Panel) as containing the Control Mode switch which was to be placed in the LOCAL position prior to making the selector switch transfers and in the REMOTE position following the switch transfers. The panel that should have been referenced was 0C521D (Diesel "D" bay. Operations personnel failed to recognize the error and proceeded to transfer the "A" Diesel Generator 125 VDC Circuits to their alternate sources rather than the "D" Diesel Generator circuits.

REPORTABILITY/ANALYSIS

This event was determined reportable per 10CFR50.73(a)(2)(i)(B) in that a plant system was aligned in a manner prohibited by the plant's Technical Specifications. Specifically, Technical Specification Action 3.8.3.1.d states that with one or more of the required Unit 1 DC distribution system load groups not energized, within 2 hours either reenergize the load group(s), or transfer the common loads aligned to the deenergized Unit 1 load group(s) to the corresponding Unit 2 load group(s), or declare the common loads aligned to the deenergized Unit 1 load group(s) inoperable and take the ACTION required by the applicable Specification(s). When 125 VDC Battery 2D620 was removed from service for the service discharge portion of its surveillance testing at 0402 hours on September 22, 1987, the common loads on Division II Unit 1 battery banks 1D620 and 1D640 should have been transferred to their corresponding Unit 2 battery banks. Only 1D620 common loads, however, were transferred. To keep the 1D620 non-common loads in service when 1D620 is removed from service for testing, the 125 VDC distribution panels of battery system 1D620 are jumpered to the distribution panels of 1D640. Thus, until the error was discovered at 1905 hours on September 24, 1987 and corrected, battery 1D640 was aligned in a manner not described in the Technical Specifications. All common loads, with the exception of the "D" Diesel Generator control circuits, which will be addressed further on in this section, were properly transferred by 2041 hours on 9/24/87. The loads on 1D640, therefore, had been aligned to an inoperable battery system for approximately 65 hours, Diesel "D" circuit loads excepted.

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

A review was performed for all common Class 1E loads that were connected to 1D640 during the 65 hours to determine the ACTION required by their applicable Specifications as per ACTION 3.8.3.1.d. The minimum time allotment to restore to operability per the applicable Specifications, following review for all common loads, was 72 hours. Thus, no Limiting Conditions for Operations were exceeded, with the exception of the "D" Diesel Generator circuit loads. It should also be noted that although 1D640 was inoperable per the Technical Specifications, it remained in service supplying 125 VDC power throughout the evolution.

When the common loads on 1D640 were being transferred to their alternate sources on 9/24/87, the "D" Diesel Generator 125 VDC control sources were inadvertently not transferred. The incorrect panel identification in operating procedure OP-102-002, Operation of 125 VDC Common Load Manual Transfer Switches, led to the incorrect transferring of Diesel "A" control circuits rather than Diesel "D" circuits. Thus, from 0402 hours on September 22, 1987 until 1411 hours on September 29, 1987, when the "D" Diesel circuits were transferred, the "D" Diesel Generator control circuits were connected to an inoperable 125 VDC source, as defined by the Technical Specifications. Throughout the duration, however, 125 VDC power remained available at the "D" Diesel Generator via the load cross-tie between 1D620 and 1D640, per the battery surveillance procedures, and the ability of the diesel to perform its emergency function was never impaired. There was no operational impact to the "A" Diesel Generator as a result of its 125 VDC circuits being transferred to their alternate source. Based on the completed evaluation, there was no effect on the health and safety of the public during this incident.

CORRECTIVE ACTIONS

Upon discovery, on September 24, 1987, that the 1D640 common loads had not been transferred, the common loads were transferred to their alternate sources, except the "D" Diesel Generator DC circuits which, due to the operating procedure error, remained untransferred until their discovery on September 29, 1987 at 1230 hours and correction at 1411 hours on September 29, 1987, when they were transferred to their Unit 2 (alternate) source.

Operating procedure OP-102-002, Operation of 125 VDC Common Load Manual Transfer Switches, was revised on September 29, 1987 to change the incorrect panel identification from 0C519A to the correct identification 0C521A,B,C and D for the respective Diesel Generators A,B,C, and D. These corrections ensure that the common 125 VDC loads for the applicable Diesel Generator will be transferred when its associated 125 VDC battery system is removed from service. Surveillance procedures SM-102(202)-A03, B03, C03 and D03, 18 Month 125 VDC Battery Electrical Parameter Test and Inspections, Battery Service Discharge and Battery Charger Capability Test procedures have been revised to include verification steps with signoffs for transfer of the associated Division common loads. The corresponding 60-Month 125 VDC Battery Discharge Performance tests were also similarly revised. These changes ensure that whenever a battery load group is taken out of service for testing, the applicable common loads are

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TEXT (If more space is required, use additional NRC Form 368A's) (17)

transferred, verified, and signed-off as such. An evaluation was completed and it concluded that this incident had no effect on the health and safety of the public.

ADDITIONAL INFORMATION

A review of all Significant Operating Occurrence Reports and licensee Event Reports written to date against the 125 VDC System was performed. LER 86-018-00, issued 1-20-87, identified an event that occurred on 12/19/86 in which a Unit 1 battery charger became inoperable and Operations personnel failed to transfer the common loads to the respective Unit 2 battery until the following day.



Pennsylvania Power & Light Company

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April 4, 1989

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

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 87-011-01
FILE R41-2
PLAS - 360

Docket No. 50-388
License No. NPF-22

Attached is Licensee Event Report 87-011-01 (update to LER 87-011-00). This event was determined to be reportable per 10CFR50.73(a)(2)(i)(B) in that the 125 VDC system was aligned in a manner prohibited by the Technical Specifications during battery capacity surveillance testing on Unit 1, which had been shutdown for refueling. All corrective actions have been completed.


R.G. Evram
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RFW/mjm

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