

**CATEGORY 1**

REGULATOR INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9708140101      DOC.DATE: 97/08/07      NOTARIZED: NO      DOCKET #  
 FACIL:50-387 Susquehanna Steam Electric Station, Unit 1, Pennsylv      05000387  
 AUTH.NAME      AUTHOR AFFILIATION  
 ELLIS,S.J.      Pennsylvania Power & Light Co.  
 KUCZYNSKI,G.J.      Pennsylvania Power & Light Co.  
 RECIP.NAME      RECIPIENT AFFILIATION

SUBJECT: LER 97-017-00:on 970711,declared "A" EDG inoperable due to  
 misposition of governor load limit control knob.Declared "A"  
 EDG operable following restoration of load limit control  
 knob & initiated heightened awareness posture.W/970807 ltr.

DISTRIBUTION CODE: IE22T      COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5  
 TITLE: 50.73/50.9 Licensee Event Report (LER), Incident Rpt, etc.

NOTES:

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U.S. Nuclear Regulatory Commission  
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SUSQUEHANNA STEAM ELECTRIC STATION  
LICENSEE EVENT REPORT 50-387/97-017-00  
PLAS - 719 FILE R41-2

Docket No. 50-387  
License No. NPF-14

Attached is Licensee Event Report 50-387/97-017-00. This report is being made pursuant to 10CFR50.73(a)(2)(v) in that Susquehanna SES Unit 1 and Unit 2 were in a condition that could have lead to the loss of a safety system. The 'A' Emergency Diesel Generator was declared inoperable due to a mispositioned load limit control knob on its governor. This condition, under an accident scenario, could lead to loss of the 'A' Control Structure Heating, Ventilation and Air Conditioning (HVAC). The 'B' Control Structure HVAC was out of service for maintenance. The loss of Control Structure HVAC degrades the Control Room habitability and the Unit 1 Engineered Safeguard System Switchgear Cooling.

*TC Walpus for GJK.*  
G. J. Kuczynski  
General Manager - Susquehanna SES.

Attachment

cc: Mr. H. J. Miller  
Regional Administrator  
U. S. Nuclear Regulatory Commission  
475 Allendale Road  
King of Prussia, PA 19406

Mr. Kenneth M. Jenison  
Sr. Resident Inspector  
U. S. Nuclear Regulatory Commission  
P. O. Box 35  
Berwick, PA 18603-0035

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LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 500 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U7.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1) Susquehanna Steam Electric Station - Unit 1						DOCKET NUMBER(2) 0 5 0 0 0 3 8 7 1			PAGE (3) OF 0 4		
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TITLE (4)  
Loss Of Control Structure HVAC Due To 'A' Diesel Generator Governor Knob Mispositioning

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 7	1 1	9 7	9 7	0 1 7	0 0	0 8	0 7	9 7	Susquehanna SES - Unit 2		0 5 0 0 0 3 8 8

OPERATING MODE (9) 1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR : (Check one or more of the following) (11)										
POWER LEVEL (10) 1 0 0	<input type="checkbox"/> 20.402(b)	<input type="checkbox"/> 20.405(e)	<input type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(b)							
	<input type="checkbox"/> 20.405(a)(1)(X)	<input type="checkbox"/> 50.36(c)(1)	<input checked="" type="checkbox"/> 50.73(a)(2)(v)	<input type="checkbox"/> 73.71(c)							
	<input type="checkbox"/> 20.405(a)(1)(B)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(4)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)							
	<input type="checkbox"/> 20.405(a)(1)(H)	<input type="checkbox"/> 50.73(a)(2)(X)	<input type="checkbox"/> 50.73(a)(2)(4)(A)								
	<input type="checkbox"/> 20.405(a)(1)(V)	<input type="checkbox"/> 50.73(a)(2)(I)	<input type="checkbox"/> 50.73(1)(2)(4)(B)								
	<input type="checkbox"/> 20.405(a)(1)(Y)	<input type="checkbox"/> 50.73(a)(2)(B)	<input type="checkbox"/> 50.73(a)(2)(x)								

NAME Stephen J. Ellis - Licensing Engineer											TELEPHONE NUMBER 7 1 7 5 4 2 - 3 5 3 7		
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COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)										
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDPS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPDPS	

SUPPLEMENTAL REPORT EXPECTED (14)								EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR
<input checked="" type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)								<input type="checkbox"/> NO		1	1	0 1 9 7

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

On July 11, 1997, at 1715 hours, with both Unit 1 and Unit 2 in Condition 1 (Power Operation) at 100% power, the 'A' Emergency Diesel Generator (D/G) governor load limit control knob was observed to be mispositioned. This condition rendered the 'A' D/G inoperable, and Technical Specification 3.8.1.b was entered at 2010 hours. The loss of the 'A' D/G could, under a Loss of Coolant Accident (LOCA) / Loss of Off-site Power (LOOP) condition, lead to the loss of the 'A' Engineered Safeguard System (ESS) Electrical Power Bus. Loss of this bus will result in the loss of the 'A' Control Structure Heating, Ventilation and Air Conditioning (HVAC). The 'B' Control Structure HVAC was out of service for maintenance. The loss of the Control Structure HVAC constitutes a potential loss of a system required for the safe shutdown of the plant. This condition is reportable per 10CFR50.72(b)(2)(iii)(A) and per 10CFR50.73(a)(2)(v). Analysis shows that the plant could be shut down and maintained shut down for the first three (3) days following an accident without the Control Structure HVAC system. The 'B' Control Structure HVAC train could be returned to service in that time, so this is seen to have minor safety significance. At no time was the health and welfare of the public compromised. Corrective actions that have been taken include: restoration of the 'A' D/G to operable status, heightened awareness on the part of Operations and Security, limiting personnel access to the D/G Bays, performance of confidence check on critical plant components, installation of tamper paint on all D/G governor control knobs, periodic checks of governor control knob position during operator rounds, and briefing of all plant personnel on this event. The following actions are being taken: An independent review of this event is in progress, modification of the D/G governor to install a cover over the control knobs, and re-evaluation of the current personnel access program/procedures.

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

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)  Unit 1  Susquehanna Steam Electric Station	DOCKET NUMBER (2)  0   5   0   0   0   3   8   7	LER NUMBER (6)						PAGE (3)		
		YEAR		SEQUENTIAL NUMBER		REVISION NUMBER				
		9   7	—	0   1   7	—	0   0		2	OF	4

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

**EVENT DESCRIPTION**

On July 11, 1997, at 1715 hours, with both Unit 1 and Unit 2 in Condition 1 (Power Operation) at 100% power, the 'A' Emergency Diesel Generator (D/G) (EIS Code: EK) governor load limit control knob was found out of position. The knob was found at approximately 37.5%, rather than at the maximum position. With the load limit at this setting, the D/G would not have been able to maintain full load if called upon to energize its related Engineered Safeguard System (ESS) (EIS Code: EB) bus. Based on this, the 'A' D/G was declared inoperable, and Technical Specification ACTION Statement 3.8.1.b was entered at 2010 hours. This condition leads to a degraded ESS bus, which affects the 'A' Control Structure Heating, Ventilation and Air Conditioning (HVAC) (EIS Code VI). The 'B' Control Structure Chiller was out of service for maintenance at the same time, therefore, there was a potential for a complete loss of Control Structure HVAC, which constitutes potential loss of a safety system.

**CAUSE OF EVENT**

Extensive investigation has been performed and is continuing into this event. A specific root cause has not been determined at this time. However, as a result of our investigations to date, the most probable cause appears to be human intervention. No decision can be made as to the malevolent intent of the interaction. Up to this point, mechanical and/or electrical interaction, for the most part, has been ruled out as a possible cause of the knob's mispositioning. The independent investigation is continuing. The results of that investigation will be included as a supplement to this report.

Two conditions were identified that, although not a root cause in themselves, may have contributed in some way to this event. These factors are:

- The governor control knobs are not protected with a physical barrier.
- Access to the D/G Bays was not restricted to only those individuals performing required work activities:

**REPORTABILITY/ANALYSIS**

This event was determined to be reportable per 10CFR50.73(a)(2)(v) as a condition that could have prevented the fulfillment of the safety function needed for safe shutdown. In this case, the loss of the 'A' D/G could, under a Loss of Coolant Accident (LOCA) / Loss of Off-site Power (LOOP) design basis accident condition, lead to the loss of the 'A' ESS bus. The loss of this bus would lead to the loss of the 'A'

LICENSEE EVENT REPORT (LER)  
TEXT CONTINUATION

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)						PAGE (3)		
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Unit 1 Susquehanna Steam Electric Station	0   5   0   0   0   3   8   7	9   7	—	0   1   7	—	0   0	3	OF	4	

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

Control Structure Chiller (EIS Code: FB). At the time of discovery, the 'B' Control Structure Chiller was out of service for maintenance, thus, no Control Structure HVAC would be available. At Susquehanna SES, Control Structure HVAC is required for cooling of the Unit 1 ESS Electrical Power Switchgear Rooms and for Control Room habitability during the accident. Based on this same analysis, tele-notification was made to the NRC per 10CFR50.72(b)(2)(iii)(A). No actual observed effects on the safe operation of the plant occurred.

Susquehanna is designed and analyzed to operate and safely shut down with 3 of the 4 required D/G's available. Therefore, with the exception as noted above, the loss of one D/G is bounded by plant design. Analysis has been done that studies the effect of a complete loss of the Control Structure HVAC system. The analysis concludes that the Control Structure HVAC is not necessary to achieve and maintain safe shut down, at least for the first three (3) days of the event. During that time, certain operator actions are required to maintain the room temperatures below the equipment operability and Control Room habitability limits. The 'B' Control Structure HVAC could be restored to operable status within three (3) days. It is concluded from the analysis above, that the safety significance of this event is minor. At no time was the health or safety of the public compromised as a result of this event.

In accordance with the guidelines provided in NUREG-1022, Supplement 1, Item 14.1, and 10CFR50.4(d), the required submission date for this report was determined to be August 11, 1997.

**CORRECTIVE ACTIONS**

The following corrective actions have been taken:

- The 'A' D/G has been declared operable following restoration of the load limit control knob and subsequent surveillance run.
- Security implemented a heightened awareness posture.
- Operations was placed on a higher state of awareness.
- Access to the Emergency D/G bays was restricted to essential personnel.
- An all station personnel briefing paper was written and distributed to Site Supervisors for personnel briefings.

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

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

- Operations performed confidence checks on all D/G's by implementing check-off lists.
- Performed confidence checks on operational check-off lists and Instrument and Controls items in Unit 1 and Unit 2 Reactor Buildings.
- Tamper paint was installed on the three (3) D/G governor control knobs on all five (5) D/G's. Checks of these control knobs have been added to Operator rounds.
- Compiled a list of plant equipment that is not alarmed and/or checked regularly, and verified proper status.
- Briefed and have maintained communication relevant to this event with Federal and State law enforcement agencies.
- Reviewed Security procedures for the response to "Indication of Potential Tampering, Vandalism, or Malicious Mischief" for adequacy and completeness.
- Developed Operations procedure to capture operator activities in the event of potential tampering.

The following events are being taken:

- An independent investigation of this event is continuing.
- Modify the D/G governor to add a protective cover over the control knobs.
- Evaluate the current accessibility policy on Vital Area Access.

**ADDITIONAL INFORMATION**

Past similar events: Docket No. 50-387 LER 96-004-00 - Circuit Breaker Mis-Alignment Emergency Diesel Generator Inoperability

Failed Components: None