

Jeffrey B. Archie  
Vice President, Nuclear Operations  
803.345.4214



December 21, 2004

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

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION  
DOCKET NO. 50-395  
OPERATING LICENSE NO. NPF-12  
LICENSEE EVENT REPORT (LER 2004-003-00)  
SAFETY SYSTEM ACTUATION DUE TO INADVERTENT ACTUATION OF 1DA  
UNDERVOLTAGE TEST SWITCH

Attached is Licensee Event Report (LER) No. 2004-003-00, for the V. C. Summer Nuclear Station (VCSNS). The report describes the starting and loading of the "A" Emergency Diesel Generator due to an inadvertent actuation of the 1DA undervoltage test switch. This LER serves to report the safety system actuation in accordance with 10CFR50.73(a)(2)(iv)(A).

Should you have any questions, please call Mr. Ronald B. Clary at (803) 345-4757.

Very truly yours,

Jeffrey B. Archie

AJC/JBA  
Attachment

c: N. O. Lorick  
N. S. Carns  
T. G. Eppink (w/o attachment)  
R. J. White  
W. D. Travers  
K. R. Cotton  
NRC Resident Inspector  
M. N. Browne  
Paulette Ledbetter  
D. L. Abstance

EPIX Coordinator  
K. M. Sutton  
INPO Records Center  
J&H Marsh & McLennan  
Maintenance Rule Engineer  
NSRC  
CER (C-04-3386)  
File (818.07)  
DMS (RC-04-0198)

IE22

<b>NRC FORM 366</b> (7-2001)	<b>U.S. NUCLEAR REGULATORY COMMISSION</b>	<b>APPROVED BY OMB NO. 3150-0104</b>	<b>EXPIRES 7-31-2004</b>
<b>LICENSEE EVENT REPORT (LER)</b>  (See reverse for required number of digits/characters for each block)		Estimated burden per response to comply with this mandatory information 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 Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503.	

<b>1. FACILITY NAME</b> Virgil C. Summer Nuclear Station	<b>2. DOCKET NUMBER</b> 05000395	<b>3. PAGE</b> 1 OF 4
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**4. TITLE**  
 Emergency Diesel Generator Start and Load Due to Inadvertent Actuation of 1DA Undervoltage Test Switch

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	26	2004	2004	003	00	12	21	2004	FACILITY NAME	DOCKET NUMBER

<b>9. OPERATING MODE</b>	1	<b>11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §:</b> (Check all that apply)											
<b>10. POWER LEVEL</b>	100%	<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)	<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(x)	<input type="checkbox"/> 20.2203(a)(1)	<input checked="" type="checkbox"/> 50.36(c)(1)(i)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 73.71(a)(4)
		<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(5)	<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	OTHER Specify in Abstract below or in NRC Form 366A				
		<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(C)									
		<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(D)									
		<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(vii)									
		<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)									
		<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)									

**12. LICENSEE CONTACT FOR THIS LER**

<b>NAME</b> Ronald B. Clary, Mgr., Nuclear Licensing	<b>TELEPHONE NUMBER (Include Area Code)</b> (803) 345-4757
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**13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT**

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX

<b>14. SUPPLEMENTAL REPORT EXPECTED</b>				<b>15. EXPECTED SUBMISSION DATE</b>		
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

At 2152 on October 26, 2004, the normal incoming ESF feed (1DA) to the V. C. Summer Nuclear Station (VCSNS) opened on an undervoltage condition. The "A" Emergency Diesel Generator (EDG) started and loads sequenced on as designed. The "A" Residual Heat Removal (RHR) pump started but did not inject any water into the Reactor Coolant System (RCS). The "A" Emergency Feedwater (EFW) pump started and ran for approximately 19 minutes. Other plant equipment and systems also responded as expected.

At the time of the event restoration of "A" EDG from scheduled maintenance was in progress. While resetting the "A" Engineered Safety Features Loading Sequencer (ESFLS) the Operator inadvertently bumped the bus undervoltage (UV) toggle switch. This action caused the ESFLS to trip open the normal and emergency feeder breakers to 1DA, resulting in an auto-start of the "A" EDG. Closure of the "A" EDG output breaker initiated the blackout sequence on "A" train ESF equipment. Loads sequenced on as designed and equipment operated as expected. Operations personnel monitored the plant and verified conditions were stable prior to realigning the ESF bus to its normal feed and securing the EDG at approximately 2231 on October 26, 2004.

**LICENSEE EVENT REPORT (LER)**

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V.C. Summer Nuclear Station	05000395	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER
		2004	-- 003 --	00
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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

**PLANT IDENTIFICATION**

Westinghouse - Pressurized Water Reactor

**EQUIPMENT IDENTIFICATION**

- "A" Emergency Diesel Generator (EDG)
- "A" Residual Heat Removal Pump (RHR)
- "A" Emergency Feedwater Pump (EFW)

**IDENTIFICATION OF EVENT**

At 2152 on October 26, 2004, the normal incoming ESF feed (1DA) to the V. C. Summer Nuclear Station (VCSNS) opened on an undervoltage condition. The "A" Emergency Diesel Generator (EDG) started and loads sequenced on as designed. The "A" Residual Heat Removal (RHR) pump started but did not inject any water into the Reactor Coolant System (RCS). The "A" Emergency Feedwater (EFW) pump started and ran for approximately 19 minutes. Other plant equipment and systems also responded as expected.

At the time of the event restoration of "A" EDG from scheduled maintenance was in progress. While resetting the "A" Engineered Safety Features Loading Sequencer (ESFLS) the Operator inadvertently bumped the bus undervoltage (UV) toggle switch. This action caused the ESFLS to trip open the normal and emergency feeder breakers to 1DA, resulting in an auto-start of the "A" EDG. Closure of the "A" EDG output breaker initiated the blackout sequence on "A" train ESF equipment. Loads sequenced on as designed and equipment operated as expected. Operations personnel monitored the plant and verified conditions were stable prior to realigning the ESF bus to its normal feed and securing the EDG at approximately 2231 on October 26, 2004.

**EVENT DATE**

October 26, 2004

**REPORT DATE**

December 21, 2004

**CONDITIONS PRIOR TO EVENT**

Mode 1, 100% Power

**LICENSEE EVENT REPORT (LER)**

<b>1. FACILITY NAME</b>	<b>2. DOCKET</b>	<b>6. LER NUMBER</b>			<b>3. PAGE</b>
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17. NARRATIVE (If more space is required, use additional copies of NRC Form 366A)

**DESCRIPTION OF EVENT**

At 2152 on October 26, 2004, the normal incoming ESF feed (1DA) to the V. C. Summer Nuclear Station (VCSNS) opened on an undervoltage condition. The "A" Emergency Diesel Generator (EDG) started and loads sequenced on as designed. The "A" Residual Heat Removal (RHR) pump started but did not inject any water into the Reactor Coolant System (RCS). The "A" Emergency Feedwater (EFW) pump started and ran for approximately 19 minutes. Other plant equipment and systems also responded as expected.

At the time of the event restoration of "A" EDG from scheduled maintenance was in progress. While resetting the "A" Engineered Safety Features Loading Sequencer (ESFLS) the Operator inadvertently bumped the bus undervoltage (UV) toggle switch. This action caused the ESFLS to trip open the normal and emergency feeder breakers to 1DA, resulting in an auto-start of the "A" EDG. Closure of the "A" EDG output breaker initiated the blackout sequence on "A" train ESF equipment. Loads sequenced on as designed and equipment operated as expected. Operations personnel monitored the plant and verified conditions were stable prior to realigning the ESF bus to its normal feed and securing the EDG at approximately 2231 on October 26, 2004.

Condition Evaluation Report C-04-3386 was generated to document the event and lessons learned.

**CAUSE OF EVENT**

At the time of the event restoration of "A" EDG from scheduled maintenance was in progress. While resetting the "A" Engineered Safety Features Loading Sequencer (ESFLS) the Operator inadvertently bumped the bus undervoltage (UV) toggle switch. This action caused the ESFLS to trip open the normal and emergency feeder breakers to 1DA, resulting in an auto-start of the "A" EDG. Closure of the "A" EDG output breaker initiated the blackout sequence on "A" train ESF equipment. Loads sequenced on as designed and equipment operated as expected.

Subsequent to the event, the Operator informed the Control Room Supervisor that he had inadvertently bumped the "A" undervoltage toggle switch as he was resetting the sequencer. Operations personnel monitored the plant and verified conditions were stable prior to realigning the plant to the normal feed and securing the EDG at approximately 2231 on October 26, 2004.

**ANALYSIS OF EVENT**

The undervoltage and degraded voltage relays associated with 1DA functioned properly upon detecting the loss of voltage on the incoming 115kV line subsequent to the inadvertent undervoltage test switch signal. The "A" EDG started and loads sequenced on as designed. Operators acknowledged alarms and walked down the main control board to ensure equipment was functioning properly. Building operators were also dispatched to monitor proper operation of some of the more critical equipment such as the EDG, the RHR pump, and the EFW pump. Once operations personnel were satisfied that conditions were stable, operating equipment that was not needed was secured. The "A" RHR pump was secured without injecting any water into the RCS. The "A" EFW pump was also secured after running for approximately 19 minutes. Additional plant equipment was also restored to normal alignment as necessary. Reactor power remained at approximately 100% throughout the event.

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

**ANALYSIS OF EVENT (Continued)**

All normal offsite power sources were available at all times throughout the event. Operations personnel monitored the plant to ensure conditions were stable prior to realigning 1DA to its normal offsite power feed. This realignment occurred at approximately 2225 hours on October 26, 2004, and the "A" EDG was subsequently secured at approximately 2231 hours. There was no equipment damage or abnormal operation noted and no unexpected transients occurred. Since "A" train equipment was the 'maintenance' train, no "B" train protected equipment supplying normal functions was affected.

**CORRECTIVE ACTIONS**

All equipment at VCSNS responded as expected.

VCSNS corrective actions include:

Condition Evaluation Report C-04-3386 was generated to document the event and lessons learned. A discussion of the event will be provided as an operating experience item during operator requalification training. A root cause evaluation is being performed to determine additional appropriate corrective actions.

**PRIOR OCCURRENCES**

There are no prior occurrences of the loss of the normal incoming ESF feed to the plant due to an inadvertent actuation of the undervoltage test switch on the ESFLS.