



November 25, 2009

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

Dear Sir / Madam:

Subject: VIRGIL C. SUMMER NUCLEAR STATION (VCSNS)
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
LICENSEE EVENT REPORT (LER 2009-002-00)
AUTOMATIC REACTOR TRIP DUE TO A MAIN GENERATOR
OUTPUT BREAKER FAULT

Attached is Licensee Event Report (LER) No. 2009-002-00, for the Virgil C. Summer Nuclear Station (VCSNS). This report describes the automatic reactor trip that occurred on October 2, 2009. The initiating event was a trip of the main turbine due to a ground fault in the main generator protection circuitry. This report is submitted in accordance with 10CFR50.73(a)(2)(iv)(A).

Should you have any questions, please call Mr. Bruce Thompson at (803) 931-5042.

Very truly yours,

Jeffrey B. Archie

WCM/JBA/gr
Attachment

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File (818.07)
PRSF (RC-09-0145)

IE22
MLR

1. FACILITY NAME Virgil C. Summer Nuclear Station Unit 1	2. DOCKET NUMBER 05000 395	3. PAGE 1 OF 3
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4. TITLE
Reactor trip from fault of main generator output breaker

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	02	2009	2009	- 2 -	0	11	25	2009		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE
Mode 1

10. POWER LEVEL
100%

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)

<input type="checkbox"/> 20.2201(b)	<input type="checkbox"/> 20.2203(a)(3)(i)	<input type="checkbox"/> 50.73(a)(2)(i)(C)	<input type="checkbox"/> 50.73(a)(2)(vii)
<input type="checkbox"/> 20.2201(d)	<input type="checkbox"/> 20.2203(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(ii)(A)	<input type="checkbox"/> 50.73(a)(2)(viii)(A)
<input type="checkbox"/> 20.2203(a)(1)	<input type="checkbox"/> 20.2203(a)(4)	<input type="checkbox"/> 50.73(a)(2)(ii)(B)	<input type="checkbox"/> 50.73(a)(2)(viii)(B)
<input type="checkbox"/> 20.2203(a)(2)(i)	<input type="checkbox"/> 50.36(c)(1)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(iii)	<input type="checkbox"/> 50.73(a)(2)(ix)(A)
<input type="checkbox"/> 20.2203(a)(2)(ii)	<input type="checkbox"/> 50.36(c)(1)(ii)(A)	<input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A)	<input type="checkbox"/> 50.73(a)(2)(x)
<input type="checkbox"/> 20.2203(a)(2)(iii)	<input type="checkbox"/> 50.36(c)(2)	<input type="checkbox"/> 50.73(a)(2)(v)(A)	<input type="checkbox"/> 73.71(a)(4)
<input type="checkbox"/> 20.2203(a)(2)(iv)	<input type="checkbox"/> 50.46(a)(3)(ii)	<input type="checkbox"/> 50.73(a)(2)(v)(B)	<input type="checkbox"/> 73.71(a)(5)
<input type="checkbox"/> 20.2203(a)(2)(v)	<input type="checkbox"/> 50.73(a)(2)(i)(A)	<input type="checkbox"/> 50.73(a)(2)(v)(C)	<input type="checkbox"/> OTHER
<input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME: Virgil C. Summer Nuclear Station Unit 1
 TELEPHONE NUMBER (Include Area Code): (803) 931-5042

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

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
X	EL	BKR	B455	Yes					

14. SUPPLEMENTAL REPORT EXPECTED
 YES (If yes, complete 15. EXPECTED SUBMISSION DATE) NO

15. EXPECTED SUBMISSION DATE
 MONTH: 03 DAY: 26 YEAR: 2010

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

On October 2, 2009, at approximately 06:49, the plant was operating in Mode 1 at 100% power when the reactor automatically tripped due to a main turbine trip. The turbine trip was initiated by a main generator stator ground. All systems responded as required. The emergency feedwater pumps automatically started on low low steam generator level as expected. The plant stabilized in Mode 3 and remained in Mode 3 until repairs were complete.

The cause of the stator ground was determined to be a failure in the 'B' phase of the main generator output breaker. The 'B' phase contact was found to be damaged. The cause of the failure is still under investigation. Upon completion of the root cause analysis, a supplement to this report will be submitted.

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NARRATIVE

PLANT IDENTIFICATION

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION

XCB0001 - Main Generator Output Breaker

IDENTIFICATION OF EVENT

On October 2, 2009, at approximately 06:49, the plant was operating in Mode 1 at 100% power when the reactor automatically tripped due to a main turbine trip. The turbine trip was initiated by a main generator stator ground.

EVENT DATE

October 2, 2009

Condition Report CR-09-03811 was written to address event.

REPORT DATE

November, 25, 2009

CONDITIONS PRIOR TO EVENT

Mode 1, 100% Power

DESCRIPTION OF EVENT

On October 2, 2009, at approximately 06:49, with the plant operating at 100% power, the 64G relay (GENERATOR STATOR GROUND) actuated and initiated a turbine trip resulting in a reactor trip. By design, 30 seconds after the turbine trip, the main generator output breaker received an open signal. Main generator breaker position in the control room indicated a mid-position condition. Further investigation revealed the 'B' phase of the output breaker did not fully open. The 'B' phase contact was observed to be damaged. All systems responded as required. The emergency feedwater pumps automatically started on low low steam generator level as expected. The plant stabilized in Mode 3 and remained in Mode 3 until repairs were complete.

Initial inspection of the 'B' phase of the main generator breaker indicated flash burns and an acrid smell. Removal and disassembly of the 'B' phase revealed damage to the breaker isolator (main contact) and the mating connection (finger carrier). An air hose and a cooling water line were found damaged as a result of the event. Failure of the main generator output breaker's 'B' phase has been determined to be the initiator of the event which created the ground fault condition.

CAUSE OF EVENT

After investigation and performance of electrical testing it was determined that degradation of the 'B' phase contact was the initiator of the ground fault condition. The cause of the breaker degradation is still being investigated. Damaged components within the breaker have been sequestered and a detailed analysis by the breaker vendor is in progress. The root cause team is using a failure modes analysis process and is working with the vendor and consultants to determine the root cause. SCE&G will submit a supplemental report upon completion of the root cause analysis and approval by the VCSNS Corrective Action Review Board. The supplemental report is projected to be submitted by March 26, 2010.

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NARRATIVE

ANALYSIS OF EVENT

The Reactor Protection System (RPS) responded as designed. Actuation of the 64G relay (GENERATOR STATOR GROUND) in the main generator protection system sent a signal to trip the main turbine. With the plant at greater than 50% reactor power, the main turbine trip signal initiated the reactor trip. The Engineered Safeguard Feature system responded as designed and there were no safety consequences as a result of this event.

CORRECTIVE ACTIONS

The 'B' phase of the generator output breaker was rebuilt. Post maintenance testing of the 'B' phase of the generator breaker was satisfactory. Tests for potential grounds within the system were performed with satisfactory results. Monitoring during startup after repairs was performed and no issues were identified. Final corrective actions will be determined when results from the on-going root cause analysis are complete. Results from these determinations will be submitted as a supplement to this report.

PRIOR OCCURRENCES

None. There were no prior failure of the main generator output breaker during the past three years.