



October 12, 2009
RC-09-0119

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 2009-001-00)
INADEQUATE PROCEDURE RESULTS IN EDG NOT OBTAINING
MAXIMUM LOAD REQUIRED BY TECHNICAL SPECIFICATION

Attached is Licensee Event Report (LER) No. 2009-001-00, for the Virgil C. Summer Nuclear Station (VCSNS). This report describes the events which led to the "B" Emergency Diesel Generator (EDG) not being able to operate at the maximum Technical Specification (TS) load which resulted in a violation of TS LCO 3.8.1.1. This report is submitted in accordance with 10CFR50.73(a)(2)(i)(B).

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

Very truly yours,

Jeffrey B. Archie

GR/JBA/jg
Attachment

c: K. B. Marsh
S. A. Byrne
N. S. Carns
J. H. Hamilton
R. J. White
W. M. Cherry
L. A. Reyes
R. E. Martin
NRC Resident Inspector
M. N. Browne
Paulette Ledbetter

D. L. Abstance
EPIX Coordinator
K. M. Sutton
INPO Records Center
Marsh USA, Inc.
Maintenance Rule Engineer
NSRC
RTS (CR-09-03120)
File (818.07)
PRSF (RC-09-0119)

LICENSEE EVENT REPORT (LER)

(See reverse for required number of digits/characters for each block)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@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. If a means used to impose 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.

1. FACILITY NAME Virgil C. Summer Nuclear Station	2. DOCKET NUMBER 05000 395	3. PAGE 1 OF 3
---	--------------------------------------	--------------------------

4. TITLE
Inadequate Procedure Results In EDG Not Obtaining Maximum Load Required By Technical Specification

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
08	12	2009	2009	- 1 -	0	10	12	2009		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE Mode 1	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)								
10. POWER LEVEL 100%	<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 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 checked="" 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	TELEPHONE NUMBER (Include Area Code) (803) 931-5042
---	--

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

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
<input type="radio"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input checked="" type="radio"/> NO				

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

On August 12, 2009 the "B" Emergency Diesel Generator (EDG) could not be operated at maximum load within the Technical Specification (TS) range of 4600-4700 kilowatts (kW). The 18 month surveillance was being performed to operate the "B" EDG continuously for 24 hours with 2 hours required at maximum load. The "as found" loading was determined to be 4575 kW which was just below the TS range. The fuel rack stop had been adjusted during maintenance on March 30, 2008. Since the two hour loading requirement could not be met and may have existed since the adjustment in 2008, this is a violation of the Limiting Condition for Operation for TS 3.8.1.1.

The root cause was determined to be inadequate procedural guidance for setting the fuel rack stop. During previous maintenance, the fuel rack stop had been set too low which did not allow the "B" EDG to be loaded high enough to achieve the required TS range. The low fuel rack stop setting was the result of a prior maintenance procedure revision which did not specify proper indication, did not have a target value and had a non-conservative loading range. The maintenance procedure has been revised to correct the problems and verify proper fuel rack stop setting.

**LICENSEE EVENT REPORT (LER) U.S. NUCLEAR REGULATORY COMMISSION
CONTINUATION SHEET**

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Virgil C. Summer Nuclear Station	05000 395	YEAR	SEQUENTIAL NUMBER	REV NO.	2 OF 3
		2009	- 001	- 0	

NARRATIVE

PLANT IDENTIFICATION

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION

XEG0001B-E, "B" Emergency Diesel Generator

IDENTIFICATION OF EVENT

On August 12, 2009 Surveillance Test Procedure STP-125.009 was being performed to demonstrate the capability of the "B" Emergency Diesel Generator (EDG) to start, load and operate continuously for 24 hours per Technical Specification (TS) 4.8.1.1.2.g.7. The TS surveillance requires that during this 24 hour run the EDG be loaded to a target value of 4676 kilowatts (kW) (between 4600-4700 kW) and maintained for two hours. When the "B" EDG load was increased for this two hour run, the load could not be increased above an average value of 4575 kW. An adjustment was then made to increase the fuel rack stop and the surveillance was completed satisfactorily. Since the two hour loading requirement could not be met and may have existed since the adjustment in 2008, this is a violation of the Limiting Condition for Operation for TS 3.8.1.1 and is a reportable event under 10CFR 50.73(a)(2)(i)(B).

EVENT DATE

August 12, 2009

Condition Report CR-09-03120 was initiated to address this event.

REPORT DATE

October 12, 2009

CONDITIONS PRIOR TO EVENT

Mode 1, 100% Power

DESCRIPTION OF EVENT

Surveillance testing is performed every 18 months on the EDGs to verify their load carrying capability over a 24 hour period at 100% full continuous rating for 22 hours and at approximately 110% load rating for 2 hours. During this surveillance test for the "B" EDG on August 12, 2009, the 110% load rating which relates to the TS range of 4600-4700 kW could not be achieved. The fuel rack stop was set too low to allow sufficient travel of the fuel rack to achieve the required load range. The fuel rack stop had previously been set on March 30, 2008 during performance of Mechanical Maintenance Procedure MMP-180.033. It was erroneously believed at the completion of this maintenance that the "as left" fuel rack stop setting resulted in loading to 4690 kW.

CAUSE OF EVENT

A root cause analysis of the event has been completed. The result of this analysis determined that the root cause was due to the fuel rack stop being set too low because of inadequate procedural guidance. Mechanical Maintenance Procedure MMP-180.033 which is used for both the "A" and "B" EDGs did not require the use of a one minute average load indication when setting the fuel rack stop. An instantaneous indication on the control room recorder IYR1804 was used to set the stop, but it did not account for load variations when the EDG is tied to the grid. The recorder can perform one minute averaging of the load signal to account for grid fluctuations, but this was not required by the procedure. In addition, the maintenance procedure did not have a target value for setting the fuel rack stop and had a non-conservative allowable load range. These procedural inadequacies resulted in the fuel rack stop being set too low.

U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Virgil C. Summer Nuclear Station	05000 395	YEAR	SEQUENTIAL NUMBER	REV NO.	3 OF 3
		2009	- 001	- 0	

NARRATIVE

ANALYSIS OF EVENT

The "A" and "B" EDGs are designed as independent trains to provide emergency power to the 7200 Volt buses in the event of loss of offsite power (LOOP). During this event on August 12, 2009, the "B" EDG was producing 4575 kW as monitored on the control room recorder IYR1804 using a one minute and ten minute average. However, this was below the TS 110% minimum loading of 4600 kW which is required for the two hour portion of the surveillance test. The design basis largest short term load (less than two hours) on the "B" EDG is 4348.7 kW, excluding optional loads, during the injection phase of a Loss of Coolant Accident (LOCA). The "B" EDG would have been capable of supplying 100 percent of the Engineered Safety Features (ESF) loads. Therefore, the "B" EDG would have been capable of performing its design basis function.

CORRECTIVE ACTIONS

Mechanical Maintenance Procedure MMP-180.033 has been revised to require the use of a 1 minute load averaging with the main control room recorder, include a load target value and provide a more conservative load range for setting the fuel rack stop. A followup action has been initiated to include these procedure changes into the Procedure/Commitment Accountability Program (PCAP) to identify that these changes were made as a result of this event to preclude an unintentional removal of these changes from the procedure in the future.

PRIOR OCCURRENCES

On August 4, 2005 a similar event occurred with the "A" EDG during the 24 hour surveillance test where the load could not be raised high enough to reach the TS load range of 4600-4700 kW during the required two hour maximum load period. A fuel rack stop adjustment was made in accordance with Mechanical Maintenance Procedure MMP-180.033, and a one minute average on the control room recorder was used to set the maximum loading. The maximum loading that was achieved after the adjustment was within the TS load range of 4600-4700 kW.*

Although this loading met the TS required load range after the adjustment, it did not meet the target value and was not in the fuel rack stop range specified in Mechanical Maintenance Procedure MMP-180.033. Since the procedure requirements could not be met, an engineering evaluation was performed. This evaluation established a new lower acceptable range to set the fuel rack stop to meet the TS acceptance criteria. MMP-180.033 was then changed to incorporate the new fuel rack stop lower range. The procedure change also removed the target value and the previous fuel rack stop range. The cause evaluation for this August 2005 event referred to using a one minute load averaging on the control room recorder for setting the fuel rack stop. The recorder defaults to instantaneous readout and a one minute average must be selected at the start of each test. However, this was not understood. As a result, no procedure guidance was provided to select one minute averaging for the test.

In retrospect, the actions taken to resolve this prior occurrence contributed to the procedure deficiencies identified in the root cause for this LER event.

* This event may have also been reportable pursuant to 10CFR50.73(a)(2)(i)(B). This potential reportability was discovered during research for this LER and has been entered into the station's corrective action program.