

Jeffrey B. Archie
Vice President, Nuclear Operations
803.345.4214



October 24, 2005

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 2005-003-00)
PLANT TRIP AND ASSOCIATED FIRE IN 'B' CONDENSATE PUMP MOTOR

Attached is Licensee Event Report (LER) No. 2005-003-00, for the V. C. Summer Nuclear Station (VCSNS). The report describes a plant trip resulting from a fire in the 'B' Condensate Pump Motor in accordance with 10CFR50.73(a)(2)(iv)(A).

Should you have any questions, please call Mr. Robert G. Sweet at (803) 345-4080.

Very truly yours,

Jeffrey B. Archie

AJC/JBA/dr
Attachment

c: N. O. Lorick
S. A. Byrne
N. S. Carns
G. S. Champion (w/o attachment)
R. J. White
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Maintenance Rule Engineer
NSRC
CER (C-05-3349)
File (818.07)
DMS (RC-05-0169)

IE22

NRC FORM 366 (6-2004)		U.S. NUCLEAR REGULATORY COMMISSION			APPROVED BY OMB: NO. 3150-0104		EXPIRES: 06/30/2007			
LICENSEE EVENT REPORT (LER) (See reverse for required number of digits/characters for each block)										
1. FACILITY NAME Virgil C. Summer Nuclear Station					2. DOCKET NUMBER 05000 395		3. PAGE 1 OF 3			
4. TITLE PLANT TRIP AND ASSOCIATED FIRE IN 'B' CONDENSATE PUMP MOTOR										
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	25	2005	2005	3	0	10	24	2005		05000
									FACILITY NAME	DOCKET NUMBER
										05000
9. OPERATING MODE 1		11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)								
10. POWER LEVEL 100%		<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								TELEPHONE NUMBER (Include Area Code) (803) 345-4080		
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	
E	HH	MO	E120	N	E	HH	20	P304	Y	
14. SUPPLEMENTAL REPORT EXPECTED						15. EXPECTED SUBMISSION DATE		MONTH	DAY	YEAR
<input checked="" type="radio"/> YES (If yes, complete 15. EXPECTED SUBMISSION DATE) <input type="radio"/> NO								12	30	2006
ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) <p>On 08/25/2005, at approximately 1126, the 'B' Condensate Pump tripped and the 'A' Condensate Pump was started immediately. The 'A' Condensate pump discharge valve was extremely slow to respond to the open signal, resulting in a decreasing Deaerator (DA) level.</p> <p>At 1129, smoke was reported coming from the 'B' Condensate Pump motor. There was no visible flame at this time.</p> <p>At 1133, all Feedwater Booster Pumps (FWBP) and Main Feedwater Pumps (MFP) tripped due to LO-LO DA level. As a result, the Main Turbine tripped causing a Reactor trip with Reactor power greater than 50%.</p> <p>At 1138, the Fire Brigade was assembled to respond to the fire. At 1141, a Notification of Unusual Event (NUE) was declared due to the fire in the Protected Area greater than 15 minutes in accordance with Emergency Plan Procedure (EPP) 001.1. Telephone notification was made in accordance with 10CFR72(A). At 1317, the fire was declared out in the 'B' Condensate Pump. At 1327, the Site downgraded from the NUE.</p> <p>After repairs were completed the unit was restarted and achieved criticality on 08/27/05 at 0603. The MainTurbine was placed on line on 08/27/05 at 1724. The unit returned to full power operation on 08/28/05 at 1800.</p>										

LICENSEE EVENT REPORT (LER)

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V. C. Summer Nuclear Station	05000 395	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2005	— 003	— 00	

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

PLANT IDENTIFICATION

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION

XPP0042B, 'B' Condensate Pump
XVB00614A-CO, 'A' Condensate Pump Discharge Valve

IDENTIFICATION OF EVENT

At approximately 1126 hours on August 25, 2005, operators noticed 'B' Condensate (CO) pump had tripped. The 'A' CO pump was started. The 'A' CO pump discharge valve, XVB00614A-CO, did not respond as expected. Efforts to open the pump discharge valve, XVB00614A-CO, were unsuccessful and Deaerator (DA) level continued to drop. The operators were instructed to reduce power. During this time frame, smoke was reported issuing from 'B' CO pump motor. The Fire Brigade was dispatched to the scene.

Further attempts to open XVB00614A-CO were unsuccessful. Additional instructions were given to lower power further by 1% per minute in order to regain DA level. At 2.8 feet in the DA, the REACTOR TRIP order was given, but the reactor automatically tripped when Lo-Lo DA level caused the Feedwater Pumps (FWPs) and Feedwater Booster Pumps (FWBPs) to trip, thereby tripping the Main Turbine which tripped the Reactor per the P9 permissive (RX Power >50%). During this event, the fire reported in the 'B' CO pump motor was still not extinguished and a call for offsite assistance was made. At 1141, a NOTIFICATION OF UNUSUAL EVENT (NUE) was declared for a "FIRE IN THE PROTECTED AREA OR SWITCHYARD LASTING LONGER THAN 15 MINUTES". The fire was declared out at 1317 and the NUE was downgraded at 1327.

EVENT DATE

08/25/2005

REPORT DATE

10/24/2005

CONDITIONS PRIOR TO EVENT

Mode 1, 100% Power

DESCRIPTION OF EVENT

At approximately 1126 hours on August 25, 2005, operators noticed 'B' Condensate (CO) pump had tripped. The Exhaust Hood Spray pumps were noticed to be running which would be expected due to low condensate pressure. The 'A' CO pump was started. The 'A' CO pump discharge valve, XVB00614A-CO, did not open as expected. Efforts to open the pump discharge valve, XVB00614A-CO, were unsuccessful. During this time Deaerator (DA) level was continuing to drop. The operators were instructed to reduce power. The Balance of Plant (BOP) operator was instructed to reduce load by manipulating the LOAD LIMITER one/half turn in the DECREASE direction, and the Nuclear Reactor Operator at the Controls (NROATC) was instructed to reduce power by borating 50 gallons.

During this time frame, smoke was reported issuing from 'B' CO pump motor. The Fire Brigade was dispatched to the scene.

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

DESCRIPTION OF EVENT (Continued)

The BOP operator was instructed per procedure to reduce CO flow to the DA slightly by closing down on the DA Flow Control Valve in order to reduce CO delta-p enough to enable XVG00614A-CO to open. This proved unsuccessful. Further instructions were given to lower power further by 1% per minute in order to regain DA level. The decision was made to insert a MANUAL REACTOR TRIP if DA level approached 2.5 feet narrow range. At 2.8 feet, the REACTOR TRIP order was given, but the reactor tripped when LO-LO DA level caused the Feedwater Pumps (FWPs) and Feedwater Booster Pumps (FWBPs) to trip, thereby tripping the Main Turbine which tripped the Reactor per the P9 permissive (RX Power >50%).

The Control Room entered EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION, and then EOP-1.1, REACTOR TRIP RECOVERY, to stabilize the plant. At 1139, a call for offsite assistance was made. At 1141, a NOTIFICATION OF UNUSUAL EVENT (NUE) was declared for a "FIRE IN THE PROTECTED AREA OR SWITCHYARD LASTING LONGER THAN 15 MINUTES". At 1253, a small flame was noted in the pump motor housing upon removal of an inspection cover. At no time had flames been seen external to the motor housing. At 1317, the fire was declared out with a re-flash watch stationed. The NUE was downgraded at 1327.

CAUSE OF EVENT

The cause of the trip of the 'B' Condensate Pump was determined to be a phase to ground short in the motor windings. A root cause evaluation is being performed to determine the root cause(s) of the failure of XVG00614A-CO to open.

ANALYSIS OF EVENT

When the 'A' CO Pump started and XVG00614A-CO failed to open, DA level decreased to the trip set point tripping all Feedwater Pumps and Feedwater Booster Pumps. This in turn tripped the Main Turbine, which tripped the Reactor per the P9 permissive (Rx Power >50%).

All plant equipment responded to the trip as designed.

CORRECTIVE ACTIONS

Condition Evaluation Report (CER) C-05-3349 was generated to document the event and perform a root cause evaluation to determine additional appropriate corrective actions for the failure of XVG00614A-CO to open. All Condensate Pump discharge valves are currently in the open position and will remain in that configuration until the Fall 2006 refueling outage at which time the valve can be disassembled and the root cause completed.

PRIOR OCCURRENCES

A similar event occurred in 1999, (CER 99-0007), where XVG00614A-CO took eight minutes to open. However, in that event, the plant did not trip.