SCE&G®
A SCANA COMPANY

October 18, 2000
RC-00-0330

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

Gentlemen:

Subject: VIRGIL C. SUMMER NUCLEAR STATION
DOCKET NO. 50-395
OPERATING LICENSE NO. NPF-12
LICENSEE EVENT REPORT (LER 2000-006-00)
TURBINE DRIVEN EMERGENCY FEEDWATER PUMP
DISCHARGE VALVE FOUND ISOLATED

Stephen A. Byrne
Vice President
Nuclear Operations
803.345.4622

Attached is Licensee Event Report (LER) No. 2000-006-00, for the Virgil C. Summer Nuclear Station (VCSNS). The report describes conditions that resulted in VCSNS being in an unanalyzed plant condition and outside the requirements of the facility Technical Specifications. Initial notification was made in accordance with 10 CFR 50.72(b)(1)(ii)(A).

Should you have any questions, please call Mr. Mel Browne at (803) 345-4141.

Very truly yours,

Stephen A. Byrne

South Carolina Electric & Gas Co.
Virgil C. Summer Nuclear Station
P. O. Box 88
Jenkinsville, South Carolina
29065

803.345.5209
803.635.1461

JWT/SAB/dr
Attachment

c: N. O. Lorick
N. S. Carns
T. G. Eppink (w/o attachment)
R. J. White
L. A. Reyes
K. R. Cotton
NRC Resident Inspector
H. C. Fields, Jr.
D. M. Deardorff
Paulette Ledbetter
D. L. Abstance
EPIX Coordinator
J. B. Knotts, Jr.
INPO Records Center
J&H Marsh & McLennan
NSRC
RTS (O-C-00-1235)
RTS (O-L-00-0189)
File (818.07)
DMS (RC-00-0330)

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION
(6-1998)

LICENSEE EVENT REPORT (LER)

APPROVED BY OMB NO. 3150-0104 EXPIRES 06/30/2001

FACILITY NAME	DOCKET NUMBER	PAGE
Virgil C. Summer Nuclear Station	05000395	1 of 4

TITLE

Turbine Driven Emergency Feedwater Pump Discharge Valve Found Isolated

EVENT DATE			LER NUMBER			REPORT DATE			OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
										05000
09	21	2000	2000	-- 006	-- 00	10	18	00	FACILITY NAME	DOCKET NUMBER

OPERATING MODE	1
POWER LEVEL	100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more)

20.2201(b)	20.2203(a)(2)(v)	50.73(a)(2)(i)	50.73(a)(2)(viii)
20.2203(a)(1)	20.2203(a)(3)(i)	X 50.73(a)(2)(ii)	50.73(a)(2)(x)
20.2203(a)(2)(i)	20.2203(a)(3)(ii)	50.73(a)(2)(iii)	73.71
20.2203(a)(2)(ii)	20.2203(a)(4)	50.73(a)(2)(iv)	OTHER Voluntary
20.2203(a)(2)(iii)	50.36(c)(1)	50.73(a)(2)(v)	Specify in Abstract below or in NRC FORM 366A
20.2203(a)(2)(iv)	50.36(c)(2)	50.73(a)(2)(vii)	

LICENSEE CONTACT FOR THIS LER

NAME	TELEPHONE NUMBER (Include Area Code)
M. N. Browne Manager, Nuclear Licensing & Operating Experience	(803) 345-4141

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
A	BA			Y					

SUPPLEMENTAL REPORT EXPECTED			EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE).	X	NO				

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

On 9/21/00 at 0600, during the performance of a scheduled surveillance test on the Turbine Driven Emergency Feedwater Pump (TDEFP), it was discovered that the TDEFP discharge valve, XVG-1036, had been inappropriately locked in the closed position. XVG-1036 had not been manipulated as part of this particular surveillance test; however, the stem on the valve was positioned such that it appeared different from other similar valves in the area. The duty shift supervisor (DSS) with the assistance of the shift engineer (SE) immediately opened and locked the valve in the correct position. A one hour notification was made to the NRC at 0651.

Subsequent review of plant surveillance test records revealed that the valve had been mispositioned on 8/4/00 during the quarterly performance of surveillance test procedure STP-120.004 for emergency feedwater valves.

As a result of the mispositioned valve, the TDEFP was inoperable. This condition is contrary to the requirements of Technical Specifications.

The cause of this event is attributed to human error. First, the valve was not opened, per procedure, prior to placing the locking chain on the valve handwheel. Second, the independent verification was not properly performed. Therefore, an opportunity to correct the mis-positioning was missed.

Since an initiating event did not occur during the time that the condition existed, the TDEFP was not required to function and there were no adverse consequences to the public health and safety, plant personnel, or plant equipment.

FACILITY NAME	DOCKET NUMBER	LER NUMBER			PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
V.C. Summer Nuclear Station	05000395	2000	006	00	2 of 4

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

PLANT IDENTIFICATION

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION

Emergency Feedwater Isolation Valve XVG-1036-EF

EIIS Code BA

IDENTIFICATION OF EVENT

During the performance of a scheduled surveillance test on the Turbine Driven Emergency Feedwater Pump (TDEFP), the TDEFP discharge valve, XVG-1036, was found inappropriately locked in the closed position. Subsequent review of plant surveillance test records revealed that the valve had been mispositioned on 8/4/2000 during the performance of STP-120.004 (Surveillance Test Task Sheet 0007378).

EVENT DATE

September 21, 2000

REPORT DATE

October 18, 2000

The event is documented in the VCSNS Corrective Action Program under Condition Evaluation Report CER 00-1235.

CONDITIONS PRIOR TO EVENT

Mode 1 - Power Operation (100%)

FACILITY NAME	DOCKET NUMBER	LER NUMBER			PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
V.C. Summer Nuclear Station	05000395	2000	006	00	3 of 4

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

DESCRIPTION OF EVENT

On 9/21/2000, an operator questioned the alignment of the manual discharge isolation valve (XVG-1036-EF) for the Turbine Driven Emergency Feedwater Pump (TDEFP) following a surveillance test on the TDEFP. The valve in question had not been manipulated as part of this particular surveillance test;however, the stem on the valve was positioned such that it appeared different from other similar valves in the area. After further investigation, it was determined that the valve had been incorrectly left closed and locked in that position following a different surveillance test on 8/4/2000. The valve was immediately opened and locked in position as required by Technical Specifications and a 1 hour notification was made to the NRC.

As a result of the mispositioned valve, the TDEFP was inoperable beyond the time allowed by Technical Specifications.

The mis-positioning of the valve appears to be the result of human error. First, the valve was not properly checked to be in the correct position prior to placing the locking chain on the valve handwheel. Second, the independent verification was not properly performed. Therefore, an opportunity to correct the mis-positioning error was missed.

CAUSE OF EVENT

The TDEFW pump discharge valve (XVG-1036-EF) was closed between 8/4/00 ~0340 and 9/21/00 0600. It was closed during the performance of Surveillance Test Procedure STP 120.004 to allow testing of the TDEFP suction check valve (XVC-1014). During the system restoration following a successful test, plant operations personnel failed to re-open the valve as required by STP 120.004, Attachment IIC, Return to AS FOUND. The operator performing the restoration placed a locking tab and red chain on the valve signifying "locked open". Subsequently, the operator responsible for independent verification could not operate the valve far enough in the closed direction to determine that it was actually open, especially since this is a "knocker type" valve with several degrees of free rotation on the hand wheel. He incorrectly concluded that the valve was open. The locking and independent verification of the valve was not done in accordance with Station Administrative Procedure SAP 153, Section 6.4.2. Independent verification of a locked valve requires the independent verifier to be present prior to locking the component to allow the verifier to physically check the component in the correct position. The proper technique to check an open valve is to turn the hand wheel in the closed direction until the stem moves in the closed direction.

The failure to open the valve coupled with the inadequate independent verification left the TDEFW pump flow path inoperable.

FACILITY NAME	DOCKET NUMBER	LER NUMBER			PAGE
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
V.C.Summer Nuclear Station	05000395	2000	006	00	4 of 4

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

ANALYSIS OF EVENT

The duration of time that XVG-1036 was mispositioned created a loss of an independent steam generator emergency feedwater pump and associated flow path which is contrary to the requirements of Technical Specification 3.7.1.2. Also, TS 3.8.1.1 Action b.3 requires that the TDEFP be operable. Contrary to this requirement, DG "A" was removed from service between 9/5/00-9/6/00 and DG "B" between 9/19/00-9/20/00 while the TDEFP was inoperable.

This condition was evaluated using the plant-specific probabilistic risk assessment model. The evaluation used reasonable human reliability analysis methodologies to credit operator action to diagnose and correct the condition. The results indicated an increased incremental conditional core damage frequency (ICCDP).

Since an initiating event did not occur during the time that the condition existed, the TDEFW pump was not required to function and there were no adverse consequences to the public health and safety, plant personnel, or plant equipment.

There were no significant equipment response problems observed during the period of this event.

CORRECTIVE ACTIONS

XVG-1036-EF was properly placed in the open position and locked.

Locked valves in the emergency feedwater system were verified to be in their correct position.

Other locked valves previously positioned by the two operations personnel involved with this event were reviewed and determined to be in the correct position.

Crew briefings for operating personnel were conducted to reinforce the procedure requirements and expectations for independent verification.

Condition Evaluation Report CER-00-1235 was initiated on discovery and will evaluate this condition. A supporting root cause analysis has been performed. Further self-assessments will be completed under the corrective action program. Any additional corrective actions will be identified and completed through these programs. As this event occurred due to improper performance of plant procedures and is specific to VCSNS, no generic issues should arise.

Training, procedures and job briefings will be restructured, as necessary, to enhance human engineering factors into the locked valve verification program.

PRIOR OCCURRENCES

None