10CFR50.73

SCE&G
A SPIGNA Company

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Ollie S. Bradham
Vice President
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March 12, 1990

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

SUBJECT: Virgil C. Summer Nuclear Station
Docket No. 50/395
Operating License No. NPF-12
LER 90-001

Gentlemen:

Attached is Licensee Event Report No. 90-001 for the Virgil C. Summer Nuclear Station. This report is submitted pursuant to the requirements of 10CFR50.73(a)(2)(v).

Should there be any questions, please call us at your convenience.

Very truly yours,

O. S. Bradham

DCH/OSB:lcd
Attachment

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NRC Form 366 (9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMB NO 3150-0104
EXPIRES 8/31/88

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Virgil C. Summer Nuclear Station	0 5 0 0 0 3 9 5	1 OF 0 3

TITLE (4)
Part 21 Report Indicates Failure of a Safety Function

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES	DOCKET NUMBER(S)
0 2	0 9	9 0	9 0	– 0 0 1	– 0 0	0 3	1 2	9 0		0 5 0 0 0
										0 5 0 0 0

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11)			
POWER LEVEL (10)	1 0 0	20.402(b)	20.405(c)	50.73(a)(2)(iv)	73.71(b)
		20.405(a)(1)(i)	50.36(c)(1)	X 50.73(a)(2)(v)	73.71(c)
		20.405(a)(1)(ii)	50.36(c)(2)	50.73(a)(2)(vii)	OTHER (Specify in Abstract below and in Text, NRC Form 366A)
		20.405(a)(1)(iii)	50.73(a)(2)(i)	50.73(a)(2)(viii)(A)	
		20.405(a)(1)(iv)	50.73(a)(2)(ii)	50.73(a)(2)(viii)(B)	
		20.405(a)(1)(v)	50.73(a)(2)(iii)	50.73(a)(2)(x)	

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER
W. R. Higgins, Supervisor, Regulatory Compliance	AREA CODE 8 0 3 — 3 4 5 - 4 0 4 2

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	
B	K M	C H U		Y							

SUPPLEMENTAL REPORT EXPECTED (14)

		EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X YES (If yes, complete EXPECTED SUBMISSION DATE)	NO		1 2	3 1	9 0

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (16)

On February 9, 1990, at approximately 1400 hours, Gilbert/Commonwealth, Incorporated (G/C), the Architectural Engineer (AE) for the Virgil C. Summer Nuclear Station, informed the plant of the G/C requirement to report a design deficiency per 10CFR21. The AE evaluation of the present design had reached the point where it was clear that, in the event of a High Energy Line Break (HELB) in the Intermediate Building (where the chiller units are located), one train of chilled water would be lost and the status of the other train was indeterminate. Since then, the AE has further completed the evaluation and has confirmed that, in the event of an HELB in the Intermediate Building, both chilled water trains would be rendered inoperable. This represents a failure of a safety function as described in 10CFR50.72 (b)(2)(iii) and was reported as such by South Carolina Electric & Gas Company (SCE&G).

The 10CFR21 report by G/C indicated that the previous evaluation of an HELB on the chilled water system addressed the effects of an HELB with respect to the chiller unit itself. However, the effects of the heat load on the cooling coils that would be exposed to the steam environment were not adequately addressed. Two actions were taken in order to protect the system from the recognized deficiency. The first action provided new guidance on balancing the chiller units such that each chiller is capable of supporting its respective loads during any accident, with the exception of an HELB in the Intermediate Building. The second action isolated the cooling coils, which if exposed to the steam environment created by an HELB in the Intermediate Building, would have placed excessive heat loads on the chillers.

SCE&G is evaluating the feasibility of what, if any, permanent design modifications can be made to correct the present deficiency. Upon completion of this evaluation, a supplemental LER is expected to be submitted by December 31, 1990.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

PLANT IDENTIFICATION:

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION:

Chilled Water System EIIS - KM

IDENTIFICATION OF EVENT:

A design deficiency reported per 10CFR21 indicated that a single event could prevent the fulfillment of a safety function as described in 10CFR50.73(a)(2)(v).

EVENT DATE:

February 9, 1990, at 1415 EST

REPORT DATE:

March 12, 1990

CONDITIONS PRIOR TO EVENT:

Mode 1, 100% power.

DESCRIPTION OF EVENT:

On February 9, 1990 at approximately 1400 hours, Gilbert/Commonwealth, Incorporated (G/C), the Architectural Engineer (AE) for the Virgil C. Summer Nuclear Station, informed the plant of the G/C requirement to report a design deficiency per 10CFR21. The deficiency was identified as a result of an evaluation to resolve a concern expressed by Non-Conformance Notice (NCN) 3645 which was generated by on-site personnel.

The AE evaluation of the present design had reached the point where it was clear that, in the event of an HELB in the Intermediate Building (where the chiller units are located), one train of chilled water would be lost and the status of the other train was still indeterminate. It is important to note that upon failure of the chilled water train, the Component Cooling Water (CCW) Pumps and Charging/Safety Injection (SI) Pumps on the affected train would be rendered inoperable. Since 10CFR21 requires assumption of a single failure, this condition met the criteria for reportability. 10CFR50.72(b)(2)(iii) does not require the assumption of a single failure, but since the status of the other train of chilled water was questionable, SCE&G made the decision to report the results to the NRC per 10CFR50.72(b)(2)(iii). This report was made at 1415 hours.

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TEXT (If more space is required, use additional NRC Form 366A's) (17)

The AE has further completed the evaluation and has confirmed that, in the event of an HELB in the Intermediate Building, both chilled water trains would be rendered inoperable.

CAUSE OF EVENT:

The 10CFR21 report by G/C indicated that the previous evaluation of an HELB on the chilled water system addressed the effects of an HELB with respect to the chiller unit itself. However, the effects of an HELB with respect to the heat load on the cooling coils that would be exposed to the steam environment were not adequately addressed.

ANALYSIS OF EVENT:

Since this is an analysis of the condition resulting from an HELB in the Intermediate Building and not the result of an actual event, there has never been an actual challenge of the systems or a compromise of safety to the plant.

IMMEDIATE CORRECTIVE ACTION:

Due to NCN-3645 questioning the adequacy of the design, a interim solution was implemented on January 26, 1990, to alleviate the concern pending an answer of the NCN. This solution performed two actions. The first action provided new guidance on balancing the chiller units such that each chiller is capable of supporting its respective loads during any accident, with the exception of an HELB in the Intermediate Building. The second action isolated the cooling coils which would be exposed to the steam environment created by an HELB in the Intermediate Building. Those coils service the Emergency Feedwater Pump and the Service Water Booster Pump areas. It is important to note that the isolation of these coils was verified not to be essential to the affected areas during an accident.

These items were in place when SCE&G was notified of the design deficiency and will remain in place until permanent modifications can be implemented.

ADDITIONAL CORRECTIVE ACTION:

SCE&G is evaluating the feasibility of what, if any, permanent design modifications can be made to correct the present deficiency. Upon completion of this evaluation, a supplemental LER is expected to be submitted by December 31, 1990.

PRIOR OCCURRENCES:

None