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

LICENSEE EVENT REPORT (LER)

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

Estimated burden per response to comply with this mandatory information collection request: 50.0 hrs. Reported lessons learned are incorporated into the licensing process and fed back to industry. Forward comments regarding burden estimate to the Records Management Branch (T-6 F33), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Paperwork Reduction Project (3150-0104), Office of Management and Budget, Washington, DC 20503. If 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.

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TITLE (4)

Kaowool Fire Barriers Outside 10CFR50 Appendix R Design Basis

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 NAME	DOCKET NUMBER
										05000
12	29	99	1999	-- 014 --	00	01	26	2000	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)							
POWER LEVEL (10)	100		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
			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 (12)

NAME	TELEPHONE NUMBER (Include Area Code)
A. R. Rice Manager, Nuclear Licensing & Operating Experience	(8 0 3) 3 4 5 - 4 2 3 2

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

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	KP	CBL5	B015	YES					

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If yes, complete EXPECTED SUBMISSION DATE).	NO		04	01	2000

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines) (16)

On December 28, 1999, Virgil C. Summer Nuclear Station (VCSNS) commissioned testing on Kaowool triple wrap fire barriers. The testing was conducted to confirm the fire resistance rating of typical plant specific design considerations.

On December 29, 1999, engineering personnel determined, from a review of preliminary test data, that some as installed applications may not meet the current regulatory requirements for maintaining one train free of fire damage for one hour. Station Condition Evaluation Report (CER) 99-1520 was generated to document this event and to track actions for resolution.

Engineering personnel are continuing to evaluate the test data to ascertain the actual impact of the test results on the adequacy of existing plant configurations to meet these performance requirements.

VCSNS has implemented compensatory actions (fire watches) as a conservative measure, for all Kaowool Fire Barriers that are needed to achieve and maintain post-fire safe shutdown in accordance with Appendix R of 10CFR50.48. Adjustments to these compensatory actions and any corrective actions will be based on the results of further engineering evaluation.

PLANT IDENTIFICATION

Westinghouse - Pressurized Water Reactor

EQUIPMENT IDENTIFICATION

Kaowool Fire Barrier for Electrical Cables

IDENTIFICATION OF EVENT

Testing of Kaowool triple wrap fire barriers demonstrates that some applications do not meet design requirements.

EVENT DATE

December 29, 1999

REPORT DATE

January 26, 2000

CONDITIONS PRIOR TO EVENT

Mode 1, 100% power

DESCRIPTION OF EVENT

Virgil C. Summer Nuclear Station (VCSNS) commissioned fire-endurance testing to be performed on Kaowool triple wrap fire barriers on December 28, 1999. A large scale 1-hour test was conducted at the Omega Test Labs in San Antonio, Texas. The testing was conducted on representative sample conduits and cable trays, in typical VCSNS configurations, to confirm the fire resistance rating of these barriers and verify our existing design and licensing basis. This testing was being performed as a voluntary initiative at the request of the NRC as discussed in SECY 99-204, "Kaowool and FP-60 Fire Barriers."

Engineering personnel determined, on December 29, 1999, that preliminary results indicate that some applications may not meet the current regulatory requirements for maintaining one train free of fire damage for a one hour duration (10 CFR 50 Appendix R, Section III.G.2.)

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

ANALYSIS

Some limited cable failures were identified. The limited failures were experienced in small cable, conduit, and tray applications installed in open-air configurations (not running along wall or ceiling). Other applications; large conduit, tray, and surface mounted conduit performed satisfactorily, based on a preliminary review of the test data.

VCSNS has a total of 30 Kaowool triple wrap applications that are required for Appendix R. The 30 Kaowool applications are limited to 18 separate fire areas/zones. Of the 18 fire areas, 14 have fire loads less than the current designed fire rating of the enclosure with the other four located in cable chases that have automatic fire suppression. Additionally, 16 of the affected fire areas, have acceptable core damage frequency, as calculated during Phase 1 of the IPEEE evaluation, with the remaining 2 found acceptable during Phase 2 by fire modeling.

Engineering personnel are continuing to evaluate the test data and are comparing the tested configurations to actual plant configurations. This evaluation of specific Kaowool applications will include a risk assessment based on the test data and fire hazards analysis to determine if as-installed barriers provide an adequate level of fire protection.

IMMEDIATE ACTIONS

VCSNS has implemented compensatory actions (roving fire watches) for all 30 Appendix R Kaowool triple wrap applications (18 fire areas/zones) as a conservative and precautionary measure.

LONG TERM CORRECTIVE ACTIONS

Additional actions will be taken based on the results of the engineering evaluation. During this review, VCSNS will consider NRC staff recommendations to address affected areas as noted in SECY-99-204. An update on actions being taken will be provided in a supplemental report scheduled to be submitted by April 1, 2000.