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

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 INFORMATION AND 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

LICENSEE EVENT REPORT (LER)

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

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Cook Nuclear Plant Unit 1	05000-315	1 of 1

TITLE (4)

Residual Heat Removal (RHR) Piping Vibrations Could Potentially Cause RHR Piping Failures

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
1	15	1999	1999	--	008	--	00	04	09	1999	Cook Unit 2	05000-316
											FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	5	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more) (11)			
POWER LEVEL (10)	00	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)
Mr. Donald C. Kosloff, Compliance Engineer	616/465-5901, X2129

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

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MONTH	DAY	YEAR
X	YES (If Yes, complete EXPECTED SUBMISSION DATE).		NO		06	25	1999

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

On January 15, 1999, with both units in Mode 5, plant operators reported excessive piping vibration in the residual heat removal (RHR) rooms. The vibration occurred while operating the RHR systems in shutdown cooling with low decay heat, a depressurized reactor coolant system (RCS), and low RCS temperature. Although the systems were determined to be operable, engineering evaluation of the vibration continued. On March 10, with both units still in Mode 5, engineering concluded that past modifications, either individually or cumulatively, may have inadvertently caused the RHR systems to be susceptible to high vibration failure under certain operating conditions. Since a high vibration failure of the RHR piping could significantly compromise plant safety, the condition was determined to be reportable under 10 CFR 50.72(b)(2)(i) and 50.73(a)(2)(ii). Based on this determination, an ENS notification was made on March 10, 1999, at 1650 hours in accordance with 10 CFR 50.72(b)(2)(i).

Engineering evaluation and observation of system performance determined that vibration is minimized when the RHR system alternate shutdown cooling flowpath (normally used as the flowpath for emergency core cooling system injection) is utilized with proper system flow balancing. Subsequently, RHR system operating procedures were revised to minimize vibration during shutdown cooling by utilizing the alternate shutdown cooling flowpath with proper system flow balancing. Plant operators were familiarized with the procedure changes. Preliminary flow modeling indicates that the flow-induced vibration is caused by cavitation across RHR system flow control valves. Additional flow analyses are being performed for the RHR systems. Appropriate corrective action to reduce the susceptibility of the RHR system to unacceptable levels of flow-induced vibration will be developed based on an evaluation of the analytical results. The flow-induced vibration issue will be resolved as required to permit any mode changes. When the root cause investigation for this condition is completed, an update to this LER will be submitted.