VERMONT YANKEE
NUCLEAR POWER CORPORATION

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October 15, 1996
BVY 96-124

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Reference: (a) License No. DPR-28 (Docket No. 50-271)

Subject: Reportable Occurrence No. LER 96-023

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 96-023.

Sincerely,

VERMONT YANKEE NUCLEAR POWER CORPORATION

Robert J. Wanczyk
Plant Manager

cc: USNRC Region 1 Administrator
USNRC Resident Inspector - VYNPS
USNRC Project Manager - VYNPS

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NRC Form 366 (4-95) U.S. NUCLEAR REGULATORY COMMISSION

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
VERMONT YANKEE NUCLEAR POWER STATION	05000271	01 OF 04

TITLE (4) Inadequate Surveillance Procedure results in failure to meet Technical Specification requirements for Radiation Monitor Functional Testing.

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 NO.(S) 05000
09	18	96	96	-- 023 --	00	10	15	96	N/A	

OPERATING MODE (9)	N
POWER LEVEL (10)	00

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: CHECK ONE OR MORE (11)

	20.2201(b)		20.2203(a)(2)(v)	X	50.73(a)(2)(i)		50.73(a)(2)(viii)
	20.2203(a)(1)		20.2203(a)(3)(i)		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 NO. (Include Area Code)
ROBERT J. WANCZYK, PLANT MANAGER	802-257-7711

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
NA					NA				
NA					NA				

SUPPLEMENTAL REPORT EXPECTED (14)				EXPECTED SUBMISSION DATE (15)	MO	DAY	YEAR
	YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO				

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

On 9/20/96 while shutdown for refueling, a biennial review of the reactor building ventilation and refuel floor radiation monitor functional test procedure concluded that the high alarm output contact actuation was not being verified as required by Technical Specifications (TS). Placing the Radiation Monitor (RM) test switch in the "zero" or "trip test" position isolates the high alarm output contact (K2) from the output circuit. The trip test relay was being tested by the RM source check procedure, via the K2 contact, but did not require that the relay status be verified to show contact actuation. The RM source check procedure was revised to require the K2 actuation verification and was performed satisfactorily on 9/21/96. The cause for the missed TS requirement was the inadequate test procedure. The root cause for the inadequate procedure was the failure to properly assess the system configuration against the TS surveillance requirement. Contributing causes to the event were a wiring diagram error and inadequate biennial procedure reviews. Vermont Yankee recognized a need for more comprehensive biennial procedure reviews in March of 1996. All Engineering Support Personnel were trained in management's expectations for a comprehensive biennial review process. The individual who identified this deficiency attended that training. Corrective actions therefore address correction of the deficient surveillance and the associated drawing. As the upgraded surveillance methodology verified that both the refuel floor and reactor building ventilation radiation monitors were fully functional, the event is limited to an inadequate test methodology and there was no actual system deficiency. Therefore, this event did not result in plant operation which endangered public health or safety.

DESCRIPTION OF EVENT

On September 20, 1996, while shutdown for refueling Vermont Yankee (VY) discovered during a biennial review of the operating procedure which controls the reactor building ventilation and refuel floor radiation monitors (EIIS = IL) functional/calibration that the high alarm output contact was not verified to function as required by Technical Specifications.

Previous revisions of the applicable surveillance procedures were reviewed and it was determined that the actuation of the K2 contact (EIIS = 1(I) had never been formally verified and documented.

Operations declared all 4 units inoperable on 9/20/96 at 1140 am and entered the 24 hour Limiting Condition for Operation. Actions required within 24 hours included the isolation of the reactor building ventilation system (EIIS = VA) and starting the standby gas treatment system (EIIS = BH).

Within the allotted 24 hour period, the radiation monitor (RM) source check procedure was revised to require the K2 actuation verification and was performed on 9/21/96. The affected K2 contacts functioned as required.

The results of the RM source check procedure, in conjunction with the information provided by the RM functional test and calibration procedure, met the Technical Specification requirements for functional testing of the circuit.

The affected radiation monitors were declared operable on 9/21/96 at 0320 am

CAUSE OF EVENT

The root cause for the missed Technical Specification requirement was the inadequate review of technical requirements of the surveillance test (functional test) against the as-built equipment configuration (Cognitive Human Error).

Contributing causes for the event were:

1. Use of a wiring diagram, in the procedure validation process, which lacked detail necessary to show the relationship between test switch and the K2 contact. Vendor literature did not readily identify that the trip test switch was in series with the high trip output contacts. Only a single wiring diagram provided the needed information, while other simplified diagrams did not.

2. Weak design configuration, in that the method used for wiring the radiation monitors to the logic relays in the initial design did not adequately consider the maintainability of the equipment. Specifically there was no provision for simulated signal testing of the high relay output contacts (Design Weakness).

3. Inadequate biennial procedure reviews, in that procedure reviews performed every two years since the procedure was first drafted did not find the problem (Cognitive Human Error).

ANALYSIS OF EVENT

The affected radiation monitors function to sense either high area radiation levels or high airborne contamination levels in the reactor building. In the event that the preset limit for either parameter is reached, the control logic functions to isolate the reactor building ventilation system and start the standby gas treatment system. The ability to attain this isolated condition and maintain the requisite negative reactor building pressure provides control of the radioactive material potentially released into the reactor building during postulated accidents.

The RM trip-test switch in the "zero" or "trip test" position (the position required by the aforementioned surveillance procedure) isolates K2 from the output circuit, thereby preventing verification of high alarm output contact actuation. The RM source check procedure trips the activation relay via the K2 but failed to specify that the relay be observed to confirm contact actuation.

Protective and control logic procedures were reviewed in 1987 in response to an NRC inspection of another utility and the subsequent NRC Information Notice 88-83. The intent of the review was to verify that all appropriate devices were being tested.

VY Controlled Wiring Diagrams (CWD's) and other plant logic drawings showed that the RM provided a single contact output to the affected logic circuit. This is contrary to the as-built configuration wherein the test switch is in series with the K2 high alarm contact. This configuration results in an isolation of the K2 condition from the output circuitry such that when the test switch is moved out of "operate" it provides an "open" in the RM output circuit, masking the K2 status, causing the associated output relays to deenergize independent of K2 position.

No mention is made of the effects of the trip test switch in any other documentation such as the FSAR.

The Technical Specification non-conformance was discovered as part of a routine biennial review of the equipment surveillance procedure. During the review the cognizant Engineering Analyst performed an exhaustive comparison of the procedural steps to the requirements of VY Technical Specifications and Final Safety Analysis Report. This comparison has been a long standing procedural requirement for the biennial review process.

Plant Management had recently initiated a mandatory training session (completed in March of 1996) to heighten the sensitivity of the plant engineering support staff to the need for comprehensive reviews of procedural requirements against licensing basis requirements as part of the biennial review process.

This heightened sensitivity to the need for exhaustive biennial reviews and consistent procedure upgrade contributed to the discovery and correction of this long standing deficiency.

SAFETY SIGNIFICANCE

As the modified surveillance methodology verified that both the Refuel Floor and Reactor Building Ventilation Radiation Monitors were fully functional, the event is limited to an inadequate testing methodology and there was no actual systems problem or deficiency.

All other plant radiation monitor test circuits were evaluated. It was confirmed that no other VY radiation monitor test circuits were similar.

The affected radiation monitors, although not tested as required by Technical Specifications, were in the condition required by plant Technical Specifications. Therefore, this event did not result in plant operation which endangered public health or safety.

CORRECTIVE ACTIONS

1. Immediate

   a. VY revised a procedure to properly test the high alarm output contacts. Results were satisfactory (Completed 9/21/96).

b. VY will modify the wiring of the RM high output contact such that it is not affected by the operation of the trip test switch and revise the applicable procedure to properly test the high relay (expected completion date 11/1/96).

c. Instrument and Control Department revised the applicable procedure to verify the operation of the annunciators associated with the high trips when the condition occurs during the source calibration. This was completed by revision to the procedure issued 9/20/96.

d. A Training Change Request was initiated to consider including the lessons learned from this event in Engineering Support continuing training (action complete).

2. Long Term

a. VY will continue to review procedures to ensure that Technical Specification requirements are met. This is an ongoing work effort.

b. Vermont Yankee will review logic testing procedures to ensure TS requirements are being met. This is consistent with VY's April 18, 1996 response to NRC Generic Letter 96-01. (Expected completion date 9/30/97).

Vermont Yankee recognized a need for more comprehensive biennial procedure reviews in 1995. This position was emphasized by the VY Plant Manager in a memo to all department heads dated 3/1/96. All Engineering Support Personnel were trained in management's expectations for a comprehensive and thorough biennial review process. The individual who identified this deficiency attended that training. Corrective actions are therefore limited to the correction of the deficient surveillance procedure and associated drawings, and continuing the current systematic evaluation and upgrade of plant procedures.

Vermont Yankee considers this to be as isolated occurrence brought about by an inadequate review of an unusual test circuit configuration. This will be confirmed by long term corrective action "b".

ADDITIONAL INFORMATION

VY has reported three similar events in the past five years.

LER93-04, Jet pump operability surveillance testing not performed during single loop operation due to inadequate procedure.

LER93-07, Failure to perform Technical Specification daily instrument checks due to management and human factors weakness.

LER93-10, Failure to perform annual valve cycling due to procedural omission.