VERMONT YANKEE NUCLEAR POWER CORPORATION

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May 24, 1989
VYV 89-105

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

REFERENCE: Operating License DPR-28
Docket No. 50-271
Reportable Occurrence No. LER 89-19

Dear Sirs:

As defined by 10CFR50.73, we are reporting the attached Reportable Occurrence as LER 89-19.

Very truly yours,

VERMONT YANKEE NUCLEAR POWER CORPORATION

James P Pelletier

James P. Pelletier
Plant Manager

cc: Regional Administrator
USNRC
Region I
475 Allendale Road
King of Prussia, PA 19406



IE22
1/1

NRC Form 384
(9-83)

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED OMS NO.3150-0104
EXPIRES 8/31/96

# LICENSEE EVENT REPORT (LER)

| FACILITY NAME [1] | DOCKET NO. [2] | PAGE [3] |
|---|---|---|
| VERMONT YANKEE NUCLEAR POWER STATION | 0 5 0 0 0 2 7 1 | 0 1 OF 0 3 |

TITLE [4] Inadvertent Primary Containment Isolation System Acutations Due to a Malfunction of the Reactor Building Ventilation Radiation Monitor Sensor Converter

| EVENT DATE [5] | | | LER NUMBER [6] | | | REPORT DATE [7] | | | OTHER FACILITIES INVOLVED [8] | |
|---|---|---|---|---|---|---|---|---|---|---|
| MONTH | DAY | YEAR | YEAR | SEQ. # | REV# | MONTH | DAY | YEAR | FACILITY NAMES | DOCKET NO.(S) |
| 0 5 | 0 1 | 8 9 | | | | | | | N/A | 0 5 0 0 0 |
| 0 5 | 0 1 | 8 9 | 8 9 | - 0 1 9 | - 0 0 | 0 5 | 2 4 | 8 9 | N/A | 0 5 0 0 0 |

| OPERATING MODE [9] | N | THIS REPORT IS SUBMITTED PURSUANT TO REQUIREMENTS OF 10 CFR | | | | X ONE OR MORE [11] |
|---|---|---|---|---|---|---|
| POWER LEVEL [10] | 1 0 0 | 20.402(b) | 20.405(c) | X 50.73(a)(2)(iv) | 73.71(b) | |
| | | 20.405(a)(1)(I) | 50.36(a)(1) | 50.73(a)(2)(v) | 73.71(c) | |
| | | 20.405(a)(1)(II) | 50.36(a)(2) | 50.73(a)(2)(vii) | OTHER: | |
| | | 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 NO. AREA CODE |
|---|---|
| JAMES P. PELLETIER, PLANT MANAGER | 8 0 2 2 5 7 - 7 7 1 1 |

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT [13]

| CAUSE | SYST. | COMPNT | MANU. | REPORTABLE TO NPRDS | ..... | CAUSE | SYST | COMPNT | MANU. | REPORTABLE TO NPRDS |
|---|---|---|---|---|---|---|---|---|---|---|
| X | IL | DET | G080 | NO | | N/A | | | | |
| N/A | | | | | | N/A | | | | |

| SUPPLEMENTAL REPORT EXPECTED [14] | | EXPECTED SUBMISSION DATE [15] | MO | DA | YR |
|---|---|---|---|---|---|
| YES (If you complete EXPECTED SUBMISSION DATE) | X NO | | | | |


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

At approximately 1705 and 1822 on 5/01/89, with the reactor operating at approximately 100% power, two Primary Containment Isolation System (PCIS) Group III and subsequent Standby Gas Treatment System (SBGTS) initiations occurred. The PCIS isolation, which isolates the primary and secondary containment ventilation, initiated when the "B" Reactor Building Ventilation Radiation Monitor (EIIS=MON) signal was noisy and drifted high enough such that the noise component of the signal exceeded its trip set-point.

The isolations were promptly reset and systems were restored to normal operation after plant personnel verified acceptable radiological conditions. Tech. Spec. 3.2.C LCO operability requirements were satisfied at all times.

Technicians investigated and replaced the sensor/converter, (EIIS=DET) in the "B" Reactor Building Ventilation Radiation Monitor System, following the second event.

The root cause for the sensor/converter misoperation has not yet been determined but is being investigated.

**LICENSEE EVENT REPORT (LER) TEXT CONTINUATION**

| UTILITY NAME (1) | DOCKET NO. (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQ. # | REV# | |
| VERMONT YANKEE NUCLEAR POWER STATION | 0 5 0 0 0 2 7 1 | 8 9 | - 0 1 9 | - 0 0 | 0 2 OF 0 3 |

TEXT (If more space is required, use additional NRC Form 384A) (17)

DESCRIPTION OF EVENTS

At approximately 1705 hours and 1822 hours on 5/01/89, with the reactor operating at approximately 100% power, two Primary Containment Isolation System (PCIS) Group III and subsequent Standby Gas Treatment System (SBGTS) initiations occurred. The PCIS isolation, which isolates the primary and secondary containment ventilation, initiated when the Reactor Building Ventilation Radiation Monitor "B" signal was noisy and drifted high enough such that the noise component of the signal exceeded its trip setpoint. At that time, the Reactor Building Radiation Monitor "A" was reading normal.

At approximately 1719 and 1827 respectively, after verifying normal radiation levels, Control Room personnel promptly reset the isolation and returned all systems to normal operation.

The "B" Reactor Building Ventilation Radiation Monitor was declared inoperative by Control Room personnel, however, the Technical Specification LCO condition was met.

The I&C Department investigated the problem and confirmed that the system signal was noisy and had drifted high enough such that the noise component of the signal exceeded the trip setpoint. At that time the sensor/converter was replaced with a spare unit. No additional trips have occurred to date.

At 1332 on 5/02/89, the "B" Reactor Building Ventilation Monitor was repaired and declared operable.

There are two radiation detectors monitoring the Reactor Building Ventilation Exhaust Duct. A signal from either detector will cause the system to trip and generate an isolation signal and a signal to start the Standby Gas Treatment System.

CAUSE OF THE EVENTS

The immediate cause of the upscale drifting is assumed to be a faulty sensor/converter in the "B" Reactor Building Ventilation Radiation Monitoring System.

The root cause of the sensor/converter failure can not be determined at this time. Exterior inspection of the device revealed no notable defects.

ANALYSIS OF EVENT

The events that occurred as a result of the isolations did not have any safety implications to plant equipment or the public.

The PCIS Group III and SBGTS operated as designed and successfully isolated the primary and secondary containment ventilation. A PCIS Group III isolation and SBGTS initiation are the expected result of a trip of one side of the Reactor Building Ventilation Radiation Monitoring System.

**LICENSEE EVENT REPORT (LER) TEXT CONTINUATION**

| UTILITY NAME (1) | DOCKET NO. (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQ. # | REV# | |
| VERMONT YANKEE NUCLEAR POWER STATION | 0 5 0 0 0 2 7 1 | 8 9 | - 0 1 9 | - 0 0 | 0 3 OF 0 3 |

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ANALYSIS OF EVENT (Cont.)

After closely reviewing the Reactor Building Ventilation Radiation Monitor recorder chart, it was determined that a very gradual upward trend had developed over a period of time due to a fault in the monitor. This upward trend, coupled with the noise signal that was present was of sufficient magnitude to trip the system.

No surveillances or unusual activities were in progress at or near either the detectors or the panels that hold the electronics.

Detector Technical Specifications Operability Requirements were satisfied at all times.

CORRECTIVE ACTIONS

1. Once radiological conditions were determined to be normal, the isolation was reset and systems returned to normal operation.

2. After the second trip the I&C Department replaced the sensor/converter and the equipment was subsequently declared operable. The sensor/converter that was replaced was a GE Model No. 194X927G012.

3. The I & C Department has discussed the problem with the vendor (GE/Reuter Stokes). The vendor was not aware of any similar sensor/converter problems experienced in other plants. No potential root cause of our failure could be determined from this effort.

4. Nuclear Network and NPRDS have also been queried, however, no responses have been received to date.

5. The sensor/converter that was replaced will be autopsied by the vendor to determine the cause of the failure.

ADDITIONAL INFORMATION

A similar incident occurred on 1/31/89. The sensor/converter in the "B" Reactor Building Ventilation Radiation Monitoring System was replaced after an apparent failure.

At the time of that incident, the failed sensor/converter had its detector replaced and was bench tested for 100 hours without failure.