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) |
|---|---|---|
| Palisades Nuclear Plant | 0 5 0 0 0 2 5 5 | 1 OF 0 5 |

TITLE (4)
FAILURE TO MEET TECHNICAL SPECIFICATION SURVEILLANCE RQMTS FOR SPENT FUEL POOL AREA VENTILATIO

| 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) |
| | | | | | | | | | N/A | 0 5 0 0 0 |
| 0 4 | 1 2 | 8 9 | 8 9 | - 0 0 8 | - 0 0 | 0 5 | 1 1 | 8 9 | N/A | 0 5 0 0 0 |

| OPERATING MODE (9) | N | THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check one or more of the following) (11) | | | |
|---|---|---|---|---|---|
| POWER LEVEL (10) | 0 8 0 | 20.402(b) | 20.405(c) | 50.73(a)(2)(iv) | 73.71(b) |
| | | 20.405(a)(1)(i) | 50.36(c)(1) | 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) | X 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) | X 50.73(a)(2)(iii) | 50.73(a)(2)(x) | |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| C S Kozup, Technical Engineer, Palisades Plant | AREA CODE 6 1 6 7 6 4 - 8 9 1 3 |

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 |
|---|---|---|---|---|---|---|---|---|---|
| ADX | V G | A D S | A 2 2 0 | No | | | | | |
| | | | | | | | | | |

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

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


Abstract

On April 12, 1989 Corporate Quality Assurance (QA) personnel identified that Technical Specification (TS) requirements identified in Table 4.2.3 pertaining to surveillance testing of charcoal adsorbers within the spent fuel pool ventilation system (VF-66) [VG;ADS] had not been met. Specifically, representative samples of the charcoal adsorber sent to a vendor for iodine removal efficiency testing did not meet the required 94 percent acceptance criteria and results of the testing were not received within the required 31 days. Plant personnel were notified of the deficiencies by the vendor on October 7, 1988. The reactor was critical with the Plant operating at 80 percent of rated power when QA personnel identified the deficiency. Reference Figure 1 "Sequence of Events Relating To VF-66 Charcoal Testing" for a chronological history of the events detailed on the attached.

The reportability concerns were not identified on October 7, 1988 when the Plant was notified of the deficiencies. This failure has been attributed to personnel error. Charcoal adsorber efficiency was determined to be 89.855 percent. The failure to maintain charcoal adsorber efficiencies within the TS limits has been attributed to improper storage of spare charcoal for the ventilation system and improper scheduling of the required testing.

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Palisades Nuclear Plant | 0 5 0 0 0 2 5 5 | 8 9 | 0 0 8 | 0 0 | 0 2 OF 0 5 |

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

Description

On April 12, 1989 Corporate Quality Assurance (QA) personnel identified that Technical Specification (TS) requirements identified in Table 4.2.3 pertaining to surveillance testing of charcoal adsorbers within the spent fuel pool ventilation system (VF-66) [VG;ADS] had not been met. Specifically, representative samples of the charcoal adsorber sent to a vendor for iodine removal efficiency testing did not meet the required 94 percent acceptance criteria and results of the testing were not received within the required 31 days. Plant personnel were notified of the deficiencies by the vendor on October 7, 1988. The reactor was critical with the Plant operating at 80 percent of rated power when QA personnel identified the deficiency. Reference Figure 1 "Sequence of Events Relating To VF-66 Charcoal Testing" for a chronological history of the events detailed on the attached.

On August 23, 1988 a representative sample of charcoal adsorber media was removed from VF-66 and sent to Nuclear Consulting Services for analysis. The sample was taken during the performance of TS Surveillance Procedure RT-85C, "Inplace HEPA and Charcoal Filter Testing", in accordance with TS Table 4.2.3.b.1. On October 7, 1988 the laboratory analysis from Nuclear Consulting Services were received. The analysis indicated the removal efficiency of the charcoal adsorber, as tested with methyl iodide, was 89.855 percent. This is contrary to the 94 percent required by TS. Further, 45 days had elapsed between removing the sample and receiving the analysis results. This is contrary to TS which requires efficiency verification within 31 days. At this time a Plant corrective action document (Deviation Report D-PAL-88-167) was initiated to address charcoal adsorber replacement and operability considerations prior to the completion of the refueling outage.

Containment integrity as required for refueling operations was maintained while K-28 was attached to the UGS except for the period between 1850 and 1930 on September 5, 1988 when the equipment hatch was opened to permit movement of a fuel handling tool into containment. Reference Licensee Event Report 88015 for information pertaining to the inadvertent withdrawl of K-28.

TS 3.8.4 requires the spent fuel pool ventilation system, with charcoal adsorbers, to be in service whenever irradiated fuel which has decayed less than 30 days is being handled. TS 3.21.2 additionally requires ventilation system operation whenever heavy loads are moved over the main fuel pool and fuel within the pool has decayed less than 90 days and when heavy loads are moved over the north tilt pit fuel storage area when fuel has decayed for less than 77 days. No movement of fuel decayed less than 30 days occurred, with the exception of K-28 being extracted from the core during UGS removal. Containment integrity as required for refueling operations was maintained while K-28 was attached to the UGS except for the period between 1850 and

1930 on September 5, 1988 when the equipment hatch was opened to permit movement of a fuel handling tool into containment. Reference Licensee Event Report 88015 for information pertaining to the inadvertent withdrawl of K-28. No heavy loads were moved in the spent fuel pool area contrary to TS fuel decay requirements.

The charcoal adsorbers were replaced and declared operable on March 30, 1989 with the successful completion of RT-85C.

## Cause Of The Event

The failure to identify the nonconformance to TS Table 4.2.3 regarding verification of efficiency testing results within 31 days has been attributed to personnel error. The personnel involved in the Plant Corrective Action Review Board (PCARB) on October 7, 1988 failed to recognize the TS requirements.

The failure to maintain charcoal adsorber efficiencies within the TS limits has been attributed to improper storage of spare charcoal for the ventilation system and improper scheduling of the required adsorbance efficiency testing. The exact cause of the storage failure could not be exactly identified, however, several factors may have contributed. The charcoal which failed RT-85C on October 7, 1988 was installed on June 10, 1988, however, it had been in storage for approximately five years prior to installation in an environment which is not temperature or humidity controlled. Additionally, while installed, the temperatures in the spent fuel pool area were relatively high.

Adsorber efficiency also may have been degraded while in storage or while installed due to the potential presence of unknown and unmonitored airborne hydro-carbon fumes.

## Corrective Action

The personnel involved with the PCARB as well as the remainder of Plant personnel involved in 10CFR50.73 reportability determinations have been made aware of the failure to identify the TS infringement regarding sample verification times. A memo will be issued to all PCARB Chairmen which will highlight responsibilities delineated by Administrative Procedure 3.03 and specifically, reportability determination.

An agreement will be entered with a vendor to provide for storage of charcoal trays, replenishing spent charcoal, maintenance of tray condition and TS sample testing. Appropriate System Operating Procedures or Operations Department checklists will be revised to provide for logging operating hours of VF-66 and to assure that to the greatest extent possible

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Palisades Nuclear Plant | 0 5 0 0 0 2 5 5 | 8 9 | — 0 0 8 | — 0 0 | 0 4 OF 0 5 |

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

that chemical releases, smoke, paint fumes or other airborne components containing hydro-carbons are not drawn into VF-66 while operating.

TS Surveillance Test RT-85C and D will be revised to address test scheduling, Plant conditions allowed for test performance, clarification of TS requirements and to have Plant Material Management personnel sign-off receipt of sample testing results within TS required times.

Analysis Of The Event

The charcoal filter installed in the spent fuel pool area exhaust will handle the full (approximately 10,000) cfm capacity of the normal ventilation flow with both exhaust fans operating. The emergency mode of operation requires that the ventilation supply fan and one exhaust fan be manually tripped following a radioactivity release with a resulting flow of 7300 cfm through the filter. Any radioactivity which should inadvertently, during a refueling operation, pass through the normally opened containment equipment door would be handled by the charcoal filter in the spent fuel pool area. Several radiation monitors installed in the Containment Building and the spent fuel pool area will give adequate warning to the refueling crew if radioactivity is released. The efficiency of the installed charcoal filters is designed to be at least 90 percent for inorganic species and 70 percent for organic species with rated flows. The offsite thyroid dose in the fuel handling accidents analyzed will be less than 10 Rem using these efficiencies should an irradiated fuel bundle be damaged in handling. Following a period of 30 days, the I-131 will have decayed by a factor of 10 and adsorption by charcoal will no longer be required.

Releases of radioactive material that may result from damage to spent fuel induced by the postulated dropping of heavy loads produces doses that are well within 10CFR100 limits of 300 Rem to the thyroid and 25 Rem to the whole body when the above iodine removal efficiencies are utilized. Control Room habitability analyses additionally utilize an iodine removal capacity of 90 percent which result in doses well below the limits specified in 10CFR50 Appendix A, Criterion 19.

This event is being reported per 10CFR50.73(a)(2)(i)(B) as an operational condition prohibited by TS and 10CFR50.73(a)(2)(iii)(D) as a condition that could have prevented the fulfillment of the safety function of a system utilized to mitigate the consequences of an accident. It should be recognized, however, that in the latter case that charcoal degradation was 0.145 percent of that taken credit for in accident analyses.

| FACILITY NAME (1) | DOCKET NUMBER (2) | LER NUMBER (6) | | | PAGE (3) |
|---|---|---|---|---|---|
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | |
| Palisades Nuclear Plant | 0 5 0 0 0 2 5 5 | 8 9 | — 0 0 8 | — 0 0 | 0 5 OF 0 5 |

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

SEQUENCE OF EVENTS RELATING TO VF-66 CHARCOAL TESTING

| Date | Description |
|---|---|
| June 10, 1988 | VF-66 charcoal replenished |
| August 8, 1988 | Refueling Outage begins |
| August 23, 1988 | VF-66 samples removed for testing |
| September 3, 1988 | Fuel bundle K-28 removed from core with UGS |
| September 9, 1988 | Core off-load begins |
| September 17, 1988 | Core off-load complete |
| October 7, 1988 | VF-66 charcoal sample fails test, Deviation Report initiated |
| October 11, 1988 | Core reload begins |
| October 21, 1988 | Core reload complete |
| April 12, 1989 | Quality Assurance identified TS violations |

Consumers Power
POWERING MICHIGAN'S PROGRESS
General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0550

May 11, 1989

Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

DOCKET 50-255 - LICENSE DPR-20 - PALISADES PLANT -
LICENSEE EVENT REPORT 89-008 - FAILURE TO MEET TECHNICAL SPECIFICATION
SURVEILLANCE REQUIREMENTS FOR SPENT FUEL POOL AREA VENTILATION

Licensee Event Report (LER) 89-008 (Failure to Meet Technical Specification Surveillance Requirements for Spent Fuel Pool Area Ventilation) is attached. This event is reportable to the NRC per 10CFR50.73(a)(2)(i) and 10CFR50.73(a)(2)(iii).

Brian D Johnson
Staff Licensing Engineer

CC Administrator, Region III, USNRC
NRC Resident Inspector - Palisades

Attachment

IE22
1/1

OC0589-0017-NL02