

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) Catawba Nuclear Station, Unit DOCKET NUMBER (2) 0 5 0 0 0 4 1 1 3 1 OF 0 3 PAGE (3)

TITLE (4) Two Inadvertent Containment Purge Trips and Undetected Technical Specification Violation Due To Unknown Cause and a Procedural Deficiency.

| 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 | | |
| 09 | 27 | 86 | 86 | 054 | 01 | 10 | 01 | 98 | N/A | | |
| | | | | | | | | | DOCKET NUMBER(S) | | |
| | | | | | | | | | 0 5 0 0 0 | | |
| | | | | | | | | | 0 5 0 0 0 | | |

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR 50. (Check one or more of the following) (11)

| | | | | | | | | |
|--------------------|-----|-------------------|--|------------------|---|----------------------|--|--|
| OPERATING MODE (9) | 6 | 20.402(b) | | 20.406(e) | X | 50.73(a)(2)(iv) | | 73.71(b) |
| POWER LEVEL (10) | 000 | 20.406(a)(1)(i) | | 50.38(c)(1) | | 50.73(a)(2)(v) | | 73.71(e) |
| | | 20.406(a)(1)(ii) | | 50.48(c)(2) | | 50.73(a)(2)(vi) | | X OTHER (Specify in Abstract below and in Text, NRC Form 366A) |
| | | 20.406(a)(1)(iii) | | 50.73(a)(1)(i) | | 50.73(a)(2)(vii)(A) | | |
| | | 20.406(a)(1)(iv) | | 50.73(a)(2)(B) | | 50.73(a)(2)(viii)(B) | | |
| | | 20.406(a)(1)(v) | | 50.73(a)(2)(iii) | | 50.73(a)(2)(ix) | | 50.72(b)(2)(ii) |

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|--|
| <u>Julio G. Torre, Associate Engineer - Licensing</u> | AREA CODE <u>71014</u> NUMBER <u>317131-18101219</u> |

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NPROS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
| | | | | | | | | | |
| | | | | | | | | | |

SUPPLEMENTAL REPORT EXPECTED (14)

YES IF YES, COMPLETE EXPECTED SUBMISSION DATE: NO

EXPECTED SUBMISSION DATE (15)

| MONTH | DAY | YEAR |
|-------|-----|------|
| | | |

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single-space typewritten lines) (18)

(1) September 27, 1986, the Containment Purge (VP) System tripped at 1039 hours, and again at 1147 hours. After the first VP trip, an investigation could not determine a cause. The signals which could have caused an Engineered Safeguards Feature (ESF) activation to trip VP were a high radiation signal from the Containment Gas Monitor (1EMF-39) or a Train A or Train B high humidity signal. After ensuring that 1EMF-39 had not tripped on high radiation, the VP system was reset and restarted, and a work request was initiated to investigate. At 1147 hours, VP tripped again, without a trip signal being identified. Duke Power personnel investigated the VP trips, but could not determine the cause. During the investigation, fused jumpers were placed across all Train B trips, and the VP system was placed in service. This was a violation of Technical Specifications, which require the VP system high humidity trips to be operable during Core alterations with VP operating. Core alterations were in progress at the time. After removal of the jumpers, VP was reset and the system was restarted and it did not trip again. The unit was in Mode 6, Refueling at the time of this incident. A procedural deficiency contributed to the incident since the Instrumentation and Electrical General Troubleshooting Procedure did not adequately address the operability concerns when using fused jumpers.

The health and safety of the public were unaffected by this event.

8810250332 881019
PDR ADOCK 05000413
S PDC

JEP
11

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | | |
|--|--|----------------|-------------------|-----------------|----------|----|-------|
| FACILITY NAME (1) McGuire Nuclear Station | DOCKET NUMBER (2) 0 5 0 0 0 4 1 3 | LER NUMBER (6) | | | PAGE (3) | | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | 8 6 | - 0 5 4 | - 0 1 | 0 2 | OF | 0 3 |

TEXT (If more space is required, use additional NRC Form 365A's) (17)

BACKGROUND:

The purpose of the Containment Purge (VP) System is to reduce airborne radioactivity in containment and the Incore Instrumentation Room by supplying outside air and exhausting the Containment and Incore Instrumentation Room air through cleanup filters before discharging the air to the atmosphere through the unit vent stack. The system is isolated automatically by a high radiation (S_h) signal from the Containment Gas Monitor (1EMF-39), or a Train A or Train B high humidity signal. Any one of these signals will trip the VP fans, close the containment isolation valves, and initiate alarms in the Control Room. During core alterations, with the VP System in operation, the Train A and Train B high humidity trips are required to be operable by Technical Specifications.

DESCRIPTION OF INCIDENT:

Unit 1 entered Mode 6, Refueling, on August 12, 1986. VP was subsequently placed in service to allow for personnel access in containment.

On September 27, 1986, at 1039 hours, Train B of the VP System tripped automatically, securing the fans and closing the containment isolation valves. Since no alarms were received from 1EMF-39, a Control Room Operator (NCO) tried to restart the system without pressing the reset button in the Control Room, which is used to reset a S_h signal from 1EMF39. When the system would not restart, the NCO found that the RESET light was not lit. Operators pressed the reset button and started the system at 1139 hours. A Work Request was issued to investigate the VP trip. At 1147 hours, the system tripped again. Investigation was done on the SSPS where a temporary modification had been installed to allow signals from 1EMF-39 to trip VP, while SSPS was otherwise out of service for the refueling outage. Finding no visible problems, Duke Power personnel installed small amperage fused jumpers across all VP trip contacts, so that if the VP system tripped again, they could determine which contact was opening to cause the trip. At 0430 hours, on September 28, 1986, with core alterations in progress and all VP trips bypassed with fused jumpers, Duke Power personnel had the NCO reset the VP System and restart the purge. This was a violation of Technical Specifications. The system did not trip again. The fused jumpers were subsequently removed from the VP contacts and the related Work Request was signed off. One jumper was inadvertently left in place and reported in LER 413/87-45.

CONCLUSION:

The cause of the two VP trips could not be determined. If the system had tripped inadvertently a third time, personnel could probably have isolated the cause, since the contact which opened to cause the trip would have blown the installed fuses. However, this could not be confirmed. The chart recorder for 1EMF-39 was inspected after the trips, but no radiation spikes were evident. Also, alarms from a high radiation trip from 1EMF-39 would not have been overlooked by Control Room personnel. The Temporary Station Modification in SSPS was also inspected to ensure that it was installed correctly.

LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

| | | | | | | | |
|--|--|----------------|-------------------|-----------------|----------|----|-----|
| FACILITY NAME (1) McGuire Nuclear Station | DOCKET NUMBER (2) 0 5 0 0 0 4 1 3 8 6 | LER NUMBER (6) | | | PAGE (3) | | |
| | | YEAR | SEQUENTIAL NUMBER | REVISION NUMBER | | | |
| | | 8 6 | 0 5 4 | 0 1 | 0 3 | OF | 0 3 |

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

There has been one previous incident involving an inadvertent SSPS actuation due to unknown causes (see LER 414/86-21).

The Technical Specification violation was attributed to a defective procedure due to the Instrumentation and Electrical General Troubleshooting Procedure not adequately addressing operability concerns while troubleshooting with fused jumpers. Involved personnel were apparently unaware that the placement of the jumpers constituted a Station Modification and the System was technically inoperable and would require a 10CFR 50.59 evaluation to verify operability. It is common practice for Instrumentation and Electrical personnel to install fused jumpers in circuits when relay contacts that are causing problems cannot be identified in other ways.

There have been two previous events involving Technical Specification violations due to inadequate events procedural precautions, (LER 413/86-01 and LER 413/86-28). Therefore this is considered a recurring event. However, neither of these events involved Instrumentation and Electrical procedures.

CORRECTIVE ACTION

- (1) The VP trip was reset each time and Containment purge was reinitiated.
- (2) The Temporary Station Modification in SSPS was inspected, but the cause for the VP trips could not be determined.
- (3) Fuses were installed across the SSPS output contacts to troubleshoot the cause of VP trips, with no success.
- (4) Corrective actions regarding the procedural deficiencies are identified in LER 413/87-45.

SAFETY ANALYSIS

This incident involved inadvertent trips and did not result in any unexpected release of radioactivity to the atmosphere. The Containment Gas Monitor did not reveal a high amount of activity at the time of the trip. The VP System's response to this signal was as expected. The Train A trips were also operable at the time, as was the humidity control system ensuring Containment isolation had a high humidity condition occurred, and ensuring the operability of the carbon filters.

This event is reportable pursuant to 10 CFR 50.73 (a) (2) (iv) and 10 CFR 50.72 (b) (2) (ii).

The health and safety of the public were not affected by this incident.

Duke Power Company
P.O. Box 33198
Charlotte, N.C. 28242

Hal B. Tucker
Vice President
Nuclear Production
(704)373-4531



DUKE POWER

October 19, 1988

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

Subject: Catawba Nuclear Station, Unit 1
Docket No. 50-413
LER 413/86-54, Revision 1

Gentlemen:

Pursuant to 10 CFR 50.73 Section (a) (1) and (d), attached is Revision 1 to Licensee Event Report 413/86-54 concerning two inadvertent Containment Purge trips due to an unknown cause and a procedural deficiency. This event was considered to be of no significance with respect to the health and safety of the public.

Very truly yours,

A handwritten signature in cursive script that reads "Hal B. Tucker".

Hal B. Tucker

JGTLER03.D2/lcs

Attachment

xc: M. L. Ernst
Acting Regional Administrator
U.S. Nuclear Regulatory Commission
Region II
101 Marietta St., NW, Suite 2900
Atlanta, Georgia 30323

American Nuclear Insurers
c/o Dottie Sherman, ANI Library
The Exchange, Suite 245
270 Farmington Avenue
Farmington, CT 06032

M & M Nuclear Consultants
1221 Avenue of the Americas
New York, New York 10020

INPO Records
Suite 1500
1100 Circle 75 Parkway
Atlanta, Georgia 30339

NRC Resident Inspector
Catawba Nuclear Station

IE22
11