# CATEGORY 1

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FACIL:50-220 Nine Mile Point Nuclear Station, Unit 1, Niagara Powe 05000220
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ABBOTT,R.B. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION

SUBJECT: LER 97-015-00:on 971203,potential bypass leakage path between drywell & torus during vent & purge were noted. Caused by filing & makeup failed to recognize bypass leakage path.Operations procedures has been revised.W/980102 ltr.

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NIAGARA MOHAWK
GENERATION
BUSINESS GROUP

NINE MILE POINT NUCLEAR STATION/LAKE ROAD, P.O. BOX 63, LYCOMING, NEW YORK 13093

January 2, 1998
NMP1L 1279

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

RE: LER 97-15
Docket No. 50-220

Gentlemen:

In accordance with 10CFR50.73 (a)(2)(v)(D), we are submitting LER 97-15, "Potential Bypass Leakage Path Between Drywell and Torus During Vent and Purge."

Very truly yours,

Richard B. Abbott

Richard B. Abbott
Plant Manager - NMP1

RBA/GJG/cmk
Enclosure

xc: Mr. H. J. Miller, Regional Administrator, Region I
Mr. B. S. Norris, Senior Resident Inspector
Records Management

IE22

NRC FORM 366 U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104
EXPIRES: 4/30/92

# LICENSEE EVENT REPORT (LER)



| FACILITY NAME (1) | DOCKET NUMBER (2) | PAGE (3) |
|---|---|---|
| Nine Mile Point Unit 1 | 05000220 | 1 OF 4 |

TITLE (4)
Potential Bypass Leakage Path Between Drywell and Torus During Vent and Purge

| 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) |
| 12 | 03 | 97 | 97 | | 015 | 00 | 01 | 02 | 98 | N/A | 05000 |
| | | | | | | | | | | N/A | 05000 |

OPERATING MODE (9): 4

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

POWER LEVEL (10): 000

- ☐ 20.402(b)
- ☐ 20.405(a)(1)(i)
- ☐ 20.405(a)(1)(ii)
- ☐ 20.405(a)(1)(iii)
- ☐ 20.405(a)(1)(iv)
- ☐ 20.405(a)(1)(v)
- ☐ 20.405(c)
- ☐ 50.36(c)(1)
- ☐ 50.36(c)(2)
- ☐ 50.73(a)(2)(i)
- ☐ 50.73(a)(2)(ii)
- ☐ 50.73(a)(2)(iii)
- ☐ 50.73(a)(2)(iv)
- ☒ 50.73(a)(2)(v)
- ☐ 50.73(a)(2)(vii)
- ☐ 50.73(a)(2)(viii)(A)
- ☐ 50.73(a)(2)(viii)(B)
- ☐ 50.73(a)(2)(x)
- ☐ 73.71(b)
- ☐ 73.71(c)
- ☐ OTHER *(Specify in Abstract below and in Text, NRC Form 366A)*

LICENSEE CONTACT FOR THIS LER (12)

| NAME | TELEPHONE NUMBER |
|---|---|
| R. G. Randall - Manager Engineering NMP1 | (315) 349-2445 |

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

| CAUSE | SYSTEM | COMPONENT | MANUFAC-TURER | REPORTABLE TO NPRDS | | CAUSE | SYSTEM | COMPONENT | MANUFAC-TURER | REPORTABLE TO NPRDS |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

| SUPPLEMENTAL REPORT EXPECTED (14) | | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
|---|---|---|---|---|---|
| ☒ YES *(If yes, complete EXPECTED SUBMISSION DATE)* | ☐ NO | | 05 | 01 | 98 |

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

On December 3, 1997, Niagara Mohawk Power Corporation (NMPC) determined that Nine Mile Point Unit 1 (NMP1) had operated in a configuration which would have negatively impacted the pressure suppression function of the torus. During startup, shutdown and normal operation, the Drywell and Suppression Chamber vent valves have been open coincidentally to inert, deinert and maintain primary containment pressure. This method failed to consider the bypass leakage implication of operation in that configuration. This condition was discovered during our review of a similar condition described in General Electric (GE) 10CFR Part 21 report SC 97-04.

The cause of this event has been determined to be that the operating procedure for containment venting, filling and makeup failed to recognize this bypass leakage path.

The operations procedure for containment venting, filling and makeup has been revised to not allow coincident opening of the drywell and torus vent and purge valves.

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

## I. DESCRIPTION OF EVENT

During review of General Electric (GE) 10CFR Part 21, SC 97-04, Niagara Mohawk Power Corporation (NMPC) determined that Nine Mile Point Unit 1 (NMP1) had vented the drywell and torus in a manner which could have negatively impacted the pressure suppression function of the torus. This event did not directly result from the concern discussed in the GE 10CFR Part 21 report. GE 10CFR Part 21, SC 97-04 alerts licensees of a concern with regard to shorting of control cables which could have caused spurious opening of drywell and torus vent valves. NMPC has evaluated this concern and determined that the short described does not apply to NMP1. However, it was determined that during startup, shutdown and normal operation the Drywell and Suppression Chamber vent valves have been open coincidentally to inert, deinert and maintain primary containment pressure. This method failed to consider the bypass leakage implication of operation in that configuration.

NMPC has also evaluated the surveillance performed to meet Technical Specification (TS) 4.3.6, Vacuum Relief, since this testing condition also introduces a bypass leakage path. However, TS 3.3.6 states, "when primary containment is required, all suppression chamber - drywell vacuum breakers shall be operable except during testing . . ." The documentation for that TS between NMPC and the NRC supports the conclusion that it is within the NMP1 licensing basis to test these valves during power operation. Vacuum breaker testing had been reported in accordance with 10CFR50.72(b)(2)(iii)(D) on December 3, 1997. Therefore, NMPC is retracting this portion of the initial 10CFR50.72 notification.

## II. CAUSE OF EVENT

The cause of this event has been determined to be that the operating procedure for containment venting, filling and makeup failed to recognize this bypass leakage path.

## III. ANALYSIS OF EVENT

This event is reportable in accordance with 10CFR50.73(a)(2)(v)(D), "Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to: (D) Mitigate the consequences of an accident."

There are 3 configurations that have been used to coincidentally vent or pressurize the torus and drywell.

Configuration 1. TS 3.3.1 allows up to 24 hours to inert or de-inert containment during startups and shutdowns. In this configuration the eight large isolation valves (EPNs 201-07, 08, 09, 10, 16, 17, 31, and 32) were opened in order to vent and fill containment. These lines are either vented to atmosphere or pressurized during the evolution.

## III. ANALYSIS OF EVENT (cont'd)

Configuration 2. Occasionally during normal operation, nitrogen has been added to the torus and drywell simultaneously. This configuration requires 3 and 4 inch isolation valves to be opened (EPNs 201.2-03, 06, 32, and 33). The torus and drywell are interconnected by a pressurized 1.5 inch line in this configuration.

Configuration 3. On occasion during normal operation, the drywell and torus may have needed venting. The operating procedure provided a number of paths to achieve venting. Some of these paths may have interconnected the torus and drywell through the same eight large isolation valves listed in configuration 1, however, those would have only been partially open since only small flows were required to adjust the containment pressure.

An analysis is currently being performed to determine the potential increase in the peak pressures for the drywell and suppression chamber from the three possible configurations. Updated Final Safety Analysis Report (UFSAR) Figures XV-56E and XV-56F show the Loss of Coolant Accident (LOCA) pressure profiles for the Drywell and Suppression Chamber respectively. Preliminary results indicate that the peak Drywell and Suppression Chamber pressures may increase slightly from those shown in the figures, but remain below their respective design pressures. If these results stay consistent during the final review and approval process, the slight increase would have no effect on the containment's ability to perform its design basis function. After completion of the analysis, a supplement will be submitted updating the pertinent information within this report.

Even though preliminary results indicate only a slight increase in peak pressure, NMPC has also evaluated the probability of a LOCA coincident with venting operation. The probability is estimated to be 7.0E-5. This probability is based on the eight large isolation valves being open for 10 percent of a year, although the actual time of coincident venting and purging has been much less. Therefore, based upon the low probability of the event and the likelihood that the design pressures would not have been exceeded, this event posed no threat to the general public or plant personnel.

## IV. CORRECTIVE ACTIONS

1. The operations procedure for primary containment venting, filling and makeup has been revised to not allow coincident opening of the drywell and torus vent and purge valves.

2. Operating crews were briefed on the changes to the operating procedure prior to startup from forced outage 97-07 on December 7, 1997.

3. Analysis of containment pressure with the Drywell and Suppression Chamber vent and purge valves open coincidentally during a LOCA and the impact on Emergency Core Cooling Systems will be completed by April 15, 1998.

## IV. CORRECTIVE ACTIONS (cont'd)

4. A root cause evaluation will be performed by January 16, 1998 to determine why the operating procedure allowed a configuration that was outside the analyzed configuration. Based upon this evaluation, additional procedure reviews and/or other corrective actions may be required.

## V. ADDITIONAL INFORMATION

A. Failed components: none.

B. Previous similar events: none.

C. Identification of components referred to in this LER:

| COMPONENT | IEEE 803 FUNCTION | IEEE 805 SYSTEM ID |
|---|---|---|
| Drywell/Suppression Chamber | N/A | NH |
| Vent/Purge/Nitrogen System | N/A | LK |
| Valves, Vent | VTV | LK |