

LICENSEE EVENT REPORT (LER)

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 50.0 HRS. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE RECORDS AND REPORTS MANAGEMENT BRANCH (P-330), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0104), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503

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|---|------------------------------------|--------------------|
| FACILITY NAME (1) Nine Mile Point Unit 1 | DOCKET NUMBER (2) 5 0 0 0 2 2 0 | PAGE (3) 1 OF 6 |
|---|------------------------------------|--------------------|

TITLE (4)
Missed Local Leak Rate Tests Caused by Personnel Error

| 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) |
| 11 | 10 | 96 | 96 | 012 | 01 | 05 | 09 | 97 | 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)

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| POWER LEVEL (10) 0 | <input type="checkbox"/> 20.402(b) <input type="checkbox"/> 20.405(a)(1)(i) <input type="checkbox"/> 20.405(a)(1)(ii) <input type="checkbox"/> 20.405(a)(1)(iii) <input type="checkbox"/> 20.405(a)(1)(iv) <input type="checkbox"/> 20.405(a)(1)(v) | <input type="checkbox"/> 20.405(c) <input type="checkbox"/> 50.36(e)(1) <input type="checkbox"/> 50.36(e)(2) <input checked="" type="checkbox"/> 50.73(a)(2)(i) <input type="checkbox"/> 50.73(a)(2)(ii) <input type="checkbox"/> 50.73(a)(2)(iii) | <input type="checkbox"/> 50.73(a)(2)(iv) <input type="checkbox"/> 50.73(a)(2)(v) <input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(x) | <input type="checkbox"/> 73.71(b) <input type="checkbox"/> 73.71(c) <input type="checkbox"/> OTHER <small>(Specify in Abstract below and in Text, NRC Form 366A)</small> |
|-----------------------|--|---|---|---|

LICENSEE CONTACT FOR THIS LER (12)

| | |
|---|------------------------------------|
| NAME Ken Sweet, Manager Technical Support NMP1 | TELEPHONE NUMBER (315) 349-2462 |
|---|------------------------------------|

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

| CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NFRDS | CAUSE | SYSTEM | COMPONENT | MANUFACTURER | REPORTABLE TO NFRDS |
|-------|--------|-----------|--------------|---------------------|-------|--------|-----------|--------------|---------------------|
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|--|-------------------------------|-------|-----|------|
| SUPPLEMENTAL REPORT EXPECTED (14) <input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE) <input checked="" type="checkbox"/> NO | EXPECTED SUBMISSION DATE (15) | MONTH | DAY | YEAR |
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ABSTRACT (Limits to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

At 0200 hours on November 8, 1996, with Nine Mile Point Unit 1 (NMP1) in cold shutdown, during maintenance on NMP1 Containment Vacuum Relief Breaker EPN (Equipment Piece Number) 68-02, grease was discovered in the LLRT test port for the shaft sleeve seal. Following disassembly of the valve for corrective maintenance, previously untested LLRT test ports were identified on the stuffing box seals. On November 10, 1996, it was determined that the stuffing box seals had never been Type B tested in accordance with NMP1 Technical Specifications. In addition, it was determined that the grease in the valve 68-02 shaft sleeve seal may have invalidated previous Type B tests. Following the discovery of grease in the LLRT test ports of the shaft sleeve seals of valve 68-02, six other Containment Vacuum Relief Breakers were found with grease in the shaft sleeve LLRT ports. Three of those valves also had stuffing box seals that had never been locally tested. Further, as a result of corrective actions, IV 201-08 and 201-16 were identified as being in a configuration which invalidates past Type B leak rate tests.

The cause of the possible inaccurate leak rate test results for Containment Vacuum Relief Breakers due to grease on the shaft sleeve seals is personnel error. The cause of the missed Type B tests due to failure to include the stuffing box seals in the Appendix J program is personnel error in that self-checking was not effectively employed to ensure that the seals had been included in the Appendix J program. The cause of the IV 201-08 and 201-16 discrepancy is failure to maintain configuration, which is a personnel error.

The affected seals on the valves were replaced. Type B testing was satisfactorily completed, and field walkdowns of similar components were performed to verify testing according to the Appendix J program.

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RECORDS AND REPORTS MANAGEMENT BRANCH (P-530), U.S. NUCLEAR REGULATORY
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TEXT (If more space is required, use additional NRC Form 366A's) (17)

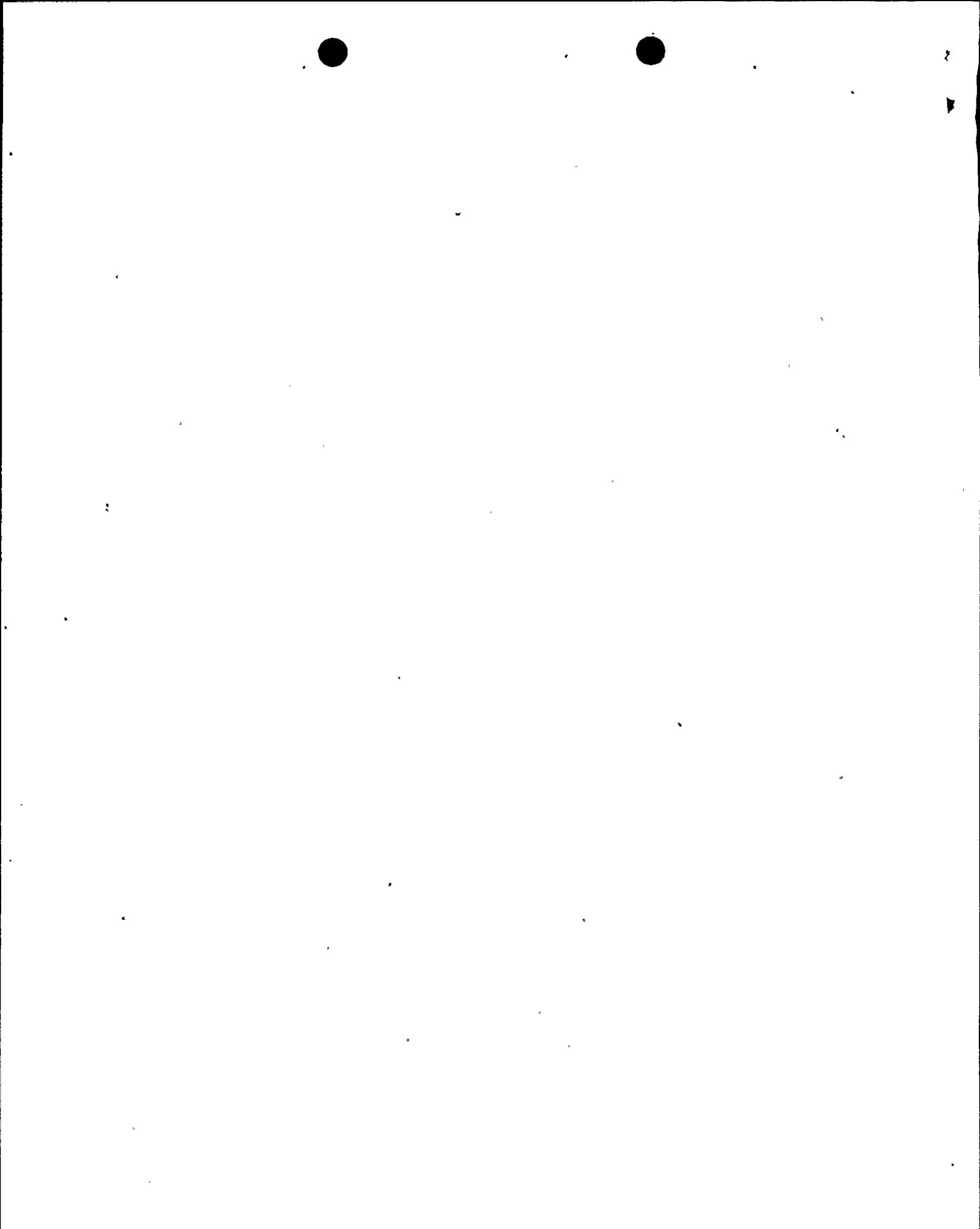
I. DESCRIPTION OF EVENT

At 0200 hours on November 8, 1996, with NMP1 in cold shutdown, during maintenance on NMP1 Containment Vacuum Relief Breaker Equipment Piece Number (EPN) 68-02, grease (petroleum-based) was discovered in the LLRT Test port of a shaft sleeve seal of the valve. The valve had failed to reclose while being tested in accordance with NMP1 Technical Specifications, which require Containment Vacuum Relief Breaker testing following Electromatic Relief Valve (ERV) operation (the ERVs had lifted during a reactor scram reported in LER 96-11). The presence of grease on the shaft sleeve seals and in the LLRT test ports led NMP1 engineers and maintenance personnel to question the validity of previous Type B testing (note: the shaft sleeve seals have been tested in accordance with the Appendix J program since the 1983 modification of the seals). It was concluded that previous test results may have been invalid due to the presence of the grease and plant management made a decision to refurbish the shaft seals prior to startup. An inspection of the remaining Containment Vacuum Relief Breakers identified six other valves (NMP1 EPNs 68-01, 68-03, 68-04, 68-05, 68-06, and 68-07) that had grease in the LLRT test ports of the shaft sleeve seals. The validity of the Type B test results of those valves was also challenged.

At 1630 hours on November 9, 1996, it was discovered that two LLRT test ports of the stuffing box seals (double O-ring design) of valve 68-02 were not included in the NMP1 Appendix J testing program, and a Deviation Event Report (DER) was initiated to determine if this was appropriate. It was further determined on November 10, 1996, that the stuffing box seals had never been Type B tested in accordance with NMP1 Technical Specifications. The deviation was identified while investigating the cause of the unexpected grease found in the LLRT test port of the valve shaft seals. It was following disassembly of the valve that the untested ports were identified. A further review of plant design documents and drawings determined that the stuffing box seals of NMP1 Containment Vacuum Relief Breakers 68-01, 68-03, and 68-04 were also not Type B tested in accordance with Appendix J requirements (NMP1 valves 68-05, 68-06, and 68-07 stuffing boxes are included in Type C testing). The design of the valves is such that two Type B tests per valve (left and right sides of each valve), for a total of eight tests, were required but were not included in the NMP1 Appendix J testing program.

A corrective action of LER 96-12 was a walkdown of similar configurations to determine if other unique configurations had been overlooked. This walkdown identified a potential for non-conforming design configuration on the Torus Vent and Purge Isolation Valves IV 201-08 and IV 201-16. A drawing review was conducted but could not confirm the existence of a component configuration discrepancy. This potential deviation was documented in DER 1-96-3063 and the corrective action was to disassemble and inspect the valves during RFO14 to determine if a non-conforming condition existed which could result in an invalid Type B test.

On March 31, 1997, an evaluation of the as-found configuration of the valves determined that the valve flange seals contained a steel seat retaining ring and a gasket in addition to the double O-ring testable seal which was not shown on design drawings. This configuration allowed for a possible leak path which was not tested during the Type B Local Leak Rate Test between the gasket and the mating flange. The type "A" test did assure operability and leak tightness of the flanged connection.



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II. CAUSE OF EVENT

The cause of possible inaccurate leak rate test results for Containment Vacuum Relief Breaker due to grease on the shaft sleeve seals is personnel error. The LLRT test ports were inappropriately used to introduce grease into the seals. Prior to 1983, there was no specific lubrication procedure requirement for these valves and lubrication of the valves was performed as skills of the trade. The subject test ports were originally grease fittings used for lubrication of the valves. However, in 1983 the seals were modified and no longer required grease. At that time the grease fittings were also modified to function as LLRT test ports for the Appendix J program implementation.

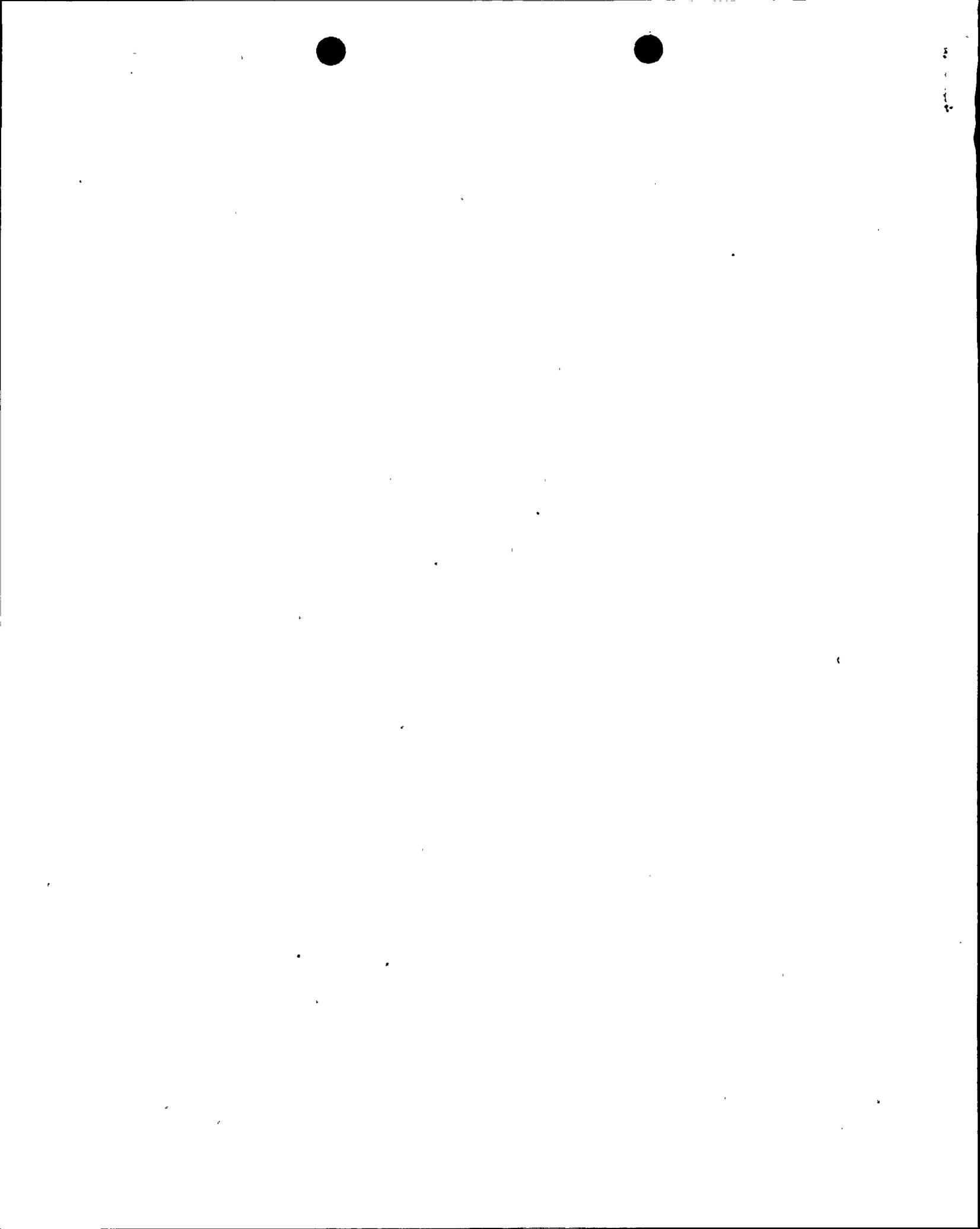
The cause of the missed Type B tests due to failure to include the double gasketed stuffing box seals in the Appendix J program is personnel error. Self-checking was not effectively employed to ensure the seals had been included in the Appendix J program. Although existing drawings for the Containment Vacuum Relief Breakers (NMP1 series F45099C) clearly displayed the LLRT ports, the required Type B testing was not included in the NMP1 Appendix J program. However, the configuration of the stuffing box seal is unique when compared to other Type B testable components. Therefore, it is considered that this is an isolated event. The deviation existed from the time of the implementation of the Appendix J program.

The apparent cause of the discrepancies in IV 201-08 and 201-16 is a failure to maintain configuration with the valve drawings due to a personnel error involving failure to use the design change process. The design change was incorrectly implemented to use a seat ring and gasket in addition to the double O-ring.

III. ANALYSIS OF EVENT

The event "Missed Local Leak Rate Tests Caused by Personnel Error" is reportable in accordance with 10CFR50.73 (a)(2)(i)(B), "Any operation or condition prohibited by the plant's Technical Specifications." The affected components are seals of the containment vacuum relief breakers and the torus vent and purge isolation valves. The subject LLRT test ports are utilized for Type B testing of the valves' double O-ring gasketed shaft seals and stuffing box seals.

As described in the Bases of the NMP1 Technical Specifications Section 3.3.3/4.3.3, the allowable test leak rate limit could be raised to about 3.0 weight percent per day before the 10CFR100 guideline thyroid dose limit would be exceeded, the NMP1 maximum allowable test leakage rate (L_a) has been conservatively established at 1.5 weight percent per day to maintain an adequate safety margin to assure the health and safety of the public. The NMP1 Technical Specification combined leak rate test limit is $0.6 L_a$ for penetrations and valves subject to Type B and C testing.



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III. ANALYSIS OF EVENT (cont'd)

Four successive Integrated Leak Rate Tests (ILRT) have been previously completed since the installation of the shaft seal O-rings (1983, 1984, 1990, and 1993). The Containment Vacuum Relief Breakers shaft seals and stuffing box seals were subjected to test pressure during ILRT tests. In addition, as-found testing (before disassembly of valves 68-01, 68-03, 68-04, 68-05, 68-06, and 68-07) and as-left testing (following replacement of the O-rings and reassembly of valves 68-01, 68-02, 68-03, 68-04, 68-05, 68-06, and 68-07) of the shaft sleeve seals and the stuffing box seals conducted prior to NMP1 start-up indicated no adverse affect on the Technical Specification required $0.6 L_a$ combined leakage limit criteria. The NMP1 allowable value for $0.6 L_a$ is 388.4 SCFH. The total NMP1 measured leakage is now 130.322 SCFH. Of this total, only 0.336 SCFH is attributed to the previously non-tested stuffing box seals as measured during Type B testing of the affected valves following maintenance conducted prior to the startup of NMP1 from the forced outage. The possible inaccurate testing of the shaft sleeve seals and exclusion of Type B testing of the stuffing box seals, therefore, did not adversely affect the containment integrity as verified by satisfactory ILRT results.

The Torus Vent and Purge Isolation Valves were subjected to and successfully passed the ILRT tests in 1983, 1984, 1990 and 1993. Therefore, as noted above, the configuration discrepancy did not adversely affect the containment integrity.

Since 1983 when the modified shaft seals were installed, the controls to ensure specific equipment is properly lubricated have transitioned from a predominantly "skills of the trade" practice to a formal program. Present administrative controls at NMP1 utilize an Engineering Specification (394M), an administrative procedure, and operations and maintenance technical procedures in conjunction with the work control process to ensure appropriate equipment lubrication.

The event had no adverse impact on any other safety system or the ability of the operators to safely shut down the plant. There was also no adverse affect on the health and safety of the public or to NMP1 plant personnel.

IV. CORRECTIVE ACTIONS

1. As-found Type B tests were performed on the shaft sleeve seals and on the stuffing box seals on Containment Vacuum Relief Breakers 68-01, 68-03, 68-04, 68-05, 68-06, and 68-07. The results were acceptable and were well within the acceptance criteria.
2. The shaft sleeve seals and stuffing box seals were replaced on the seven Containment Vacuum Relief Breakers. This was accomplished to assure that unwanted grease was removed from the shaft sleeve seals.



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IV. CORRECTIVE ACTIONS (cont'd)

3. As-left Type B tests were performed on the seven affected Containment Vacuum Relief Breakers, and the results were acceptable and were well within the acceptance criteria.
4. Prior to startup, the NMP1 Appendix J testing program was updated to ensure required Type B testing of the affected Containment Vacuum Relief Breakers, including updating the drawings and test procedures.
5. Prior to startup, Engineering and Technical Support personnel completed walkdowns of similarly configured components to ensure that no other penetration testing problems of this type exist. A potential configuration discrepancy was documented on DER 1-96-3063 for further evaluation. Operability of the valves were established prior to startup in November 1996.
6. Labels have been affixed to the Containment Vacuum Relief Breakers to identify the LLRT ports as test ports.
7. Engineering Specification #394M and the Operations Department Lubrication Schedule and the maintenance procedure for the Containment Vacuum Relief Breakers have been reviewed to verify that the LLRT test connections are not included as grease fittings.
8. Appropriate Maintenance and Operations personnel have been trained on this event concerning lubrication of the Containment Relief Vacuum Breakers.
9. Engineering, Technical Support, and Maintenance personnel with specific responsibilities for Appendix J testing program implementation have been trained to enhance their ability to identify unique design test configurations.
10. After training, Engineering and Technical Support have reviewed Appendix J component drawings, with a focus on unique configurations, to verify that other deviations do not exist.
11. Isolation valves 201-08 and 201-16 were returned to the approved design configuration and tested during the current refueling outage (RFO14).



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IV. CORRECTIVE ACTIONS (cont'd)

As of May 9, 1997, the corrective actions are complete and no other instances of Appendix J issues similar to that described are expected. Specifically, the review discussed in items 5, 9 and 10 are now complete. Since 1983 the configuration control process has been substantially improved and requires Engineering approval for configuration changes. Specific attention to Appendix J issues are addressed in GAP-PSH-02, "Preventative Maintenance and Surveillance Test Database", Appendix J Program Plan, NEP-DES-01, "Design Change" and NEP-CON-01, "Configuration Change".

V. ADDITIONAL INFORMATION

- A. Failed components: none.
- B. Previous similar events: LER 94-03, Supplement 1, "Missed Technical Specification Surveillance Caused by Inadequate Change Management," reported that the NMP1 drywell personnel air lock and the drywell emergency airlock had not been leak tested every six months as required by Technical Specifications. This was caused by personnel failing to update the surveillance test data base consistent with the frequency specified on the surveillance procedure. The corrective actions included correcting the database, performance of the tests, strengthening of the database update process for Technical Specification changes, and training. The corrective actions of LER 94-03 would not have prevented this event.
- C. Identification of components referred to in this LER:

| COMPONENT | IEEE 803 EHS FUNCTION | IEEE 805 SYSTEM ID |
|---------------------------------|-----------------------|--------------------|
| Containment Vacuum Relief Valve | VACB | BF |

