



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION  
RELATED TO AMENDMENT NO. 31 TO FACILITY OPERATING LICENSE NO. NPF-69  
NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT NUCLEAR STATION, UNIT 2  
DOCKET NO. 50-410

1.0 INTRODUCTION

By letter dated April 29, 1991, the Niagara Mohawk Power Corporation (the licensee) submitted a request for changes to the Nine Mile Point Nuclear Station, Unit 2, Technical Specifications (TS). The requested changes would revise Technical Specification 3/4.6.1.7 to permit plant operation to continue until the next cold shutdown (to occur no later than September 30, 1991) with an inoperable containment purge inboard isolation valve (2CPS\*AOV106).

The licensee's request to continue plant operation with the inoperable containment isolation valve was initially made to the NRC staff as a request for a Temporary Waiver of Compliance (TWOC) in a telephone conference call on April 24, 1991. After evaluating the licensee's oral request, the NRC staff granted an oral TWOC on April 24, 1991. The licensee followed up its oral request for a TWOC with a written request on April 25, 1991. The staff confirmed its oral approval with a written follow-up on April 26, 1991. The TWOC was issued to remain in effect until issuance of an emergency TS change.

2.0 EVALUATION

There are eight primary containment purge system isolation valves in Nine Mile Point 2. Each of the four penetrations, or containment purge system (CPS) lines, is equipped with an inboard and outboard isolation valve. Four valves are 12-inch diameter and have an allowable leakage rate of 3.75 scfh and four valves are 14-inch diameter with an allowable leakage rate of 4.38 scfh. All eight valves are tested at least once per 92 days per surveillance requirement 4.6.1.7.2

Primary containment purge system inboard isolation valve 2CPS\*AOV106, a 14-inch valve, failed the leakage rate requirements of 4.38 scfh during the performance of Technical Specification Surveillance Requirement 4.6.1.7.2 on April 23, 1991. The licensee then satisfactorily tested the 14-inch outboard isolation valve on the same CPS line, valve 2CPS\*AOV104. The leakage rate was 0.023 scfh. The test results of the remaining six CPS isolation valves (three inboard, three outboard) were satisfactory. Both inboard and outboard isolation valves 2CPS\*AOV106 and 2CPS\*AOV104 were placed in the closed position, tagged, and deactivated to prevent inadvertent reopening. A locally operated valve (2CPS-V6) upstream in the affected penetration was also closed and locked to prevent inadvertent opening of this penetration.



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TS 3.6.1.7 requires that the CPS valves be operable. Action b. of TS 3.6.1.7 requires the plant to be in cold shutdown within 60 hours if the valves are not operable. The surveillance requirements of TS 4.6.1.7.2 require these valves be tested at least once per 92 days.

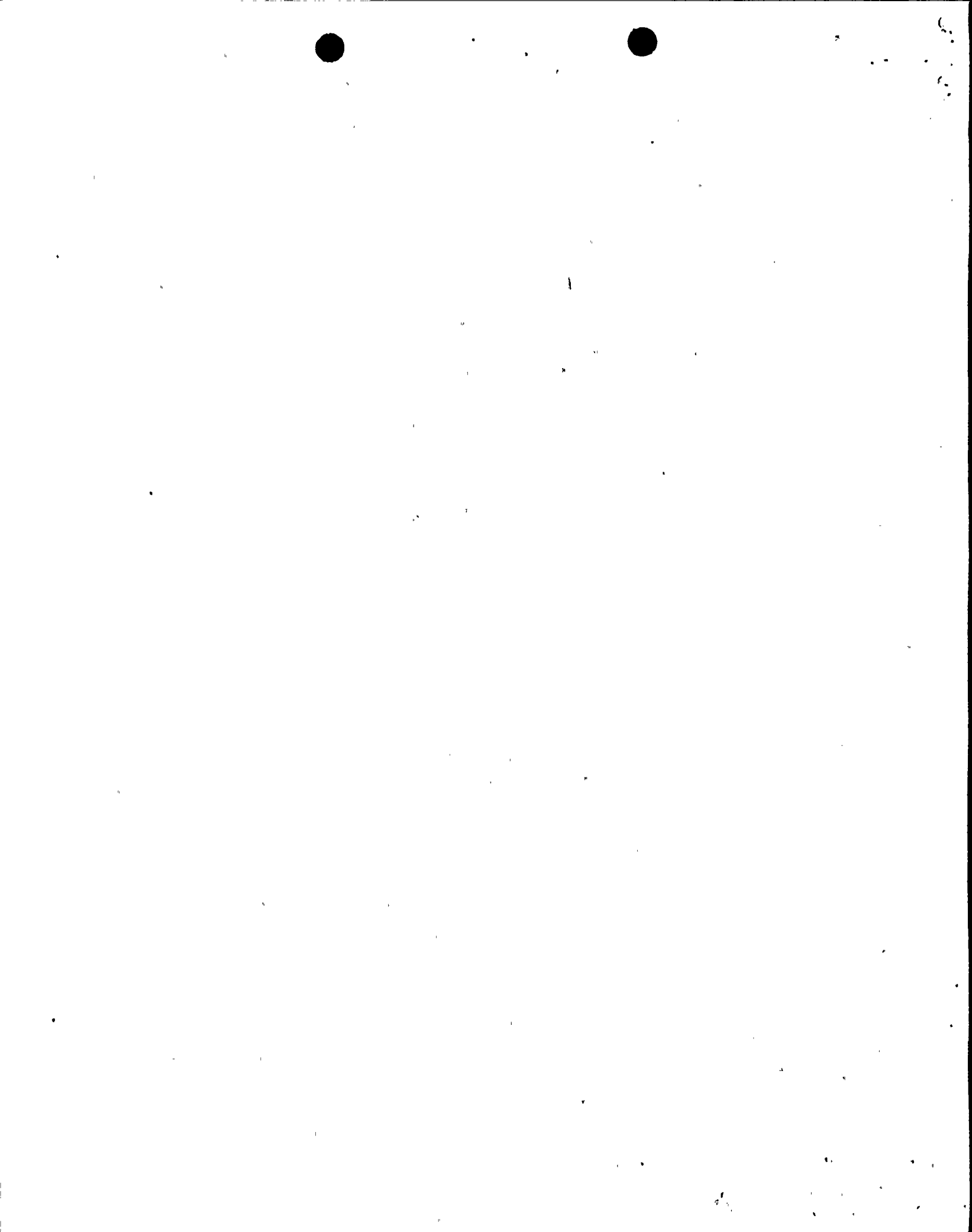
A TWOC from the operability requirements of TS 3.6.1.7, the requirements of TS 3.6.1.7 Action b., and the surveillance requirements of TS 4.6.1.7.2, was orally approved on April 24, 1991, and written follow-up was issued on April 26, 1991. The proposed amendment would revise TS 3.6.1.7, 3.6.1.7 Action b., and 4.6.1.7.2 to permit plant operation to continue until the next cold shutdown. This shutdown would occur no later than September 30, 1991. All three valves 2CPS\*AOV104, 2CPS\*AOV106, and 2CPS-V6 would be maintained closed until the plant is shut down.

The CPS line containing valves 2CPS\*AOV104 and 2CPS\*AOV106 is a potential secondary containment bypass leakage path. The bypass leakage analysis for these valves assumed that the leakage rate would be at the Technical Specification limit (4.38 scfh) for each valve. With inboard isolation valve 2CPS\*AOV106 closed, outboard isolation valve 2CPS\*AOV104 leakage well below the limit and the manual valve closed, the total bypass leakage of the drywell purge inlet line will be less than assumed in the design basis assumptions in the radiological evaluation of the design basis accident (DBA) loss-of-coolant accident (LOCA) as described in Updated Safety Analysis Report (USAR) Chapter 15. Therefore, the radiological conclusions reached in the USAR will remain valid.

The CPS is classified nonessential and is not required for safe shutdown. The system can, however, be used as backup to the DBA hydrogen recombiner system for combustible gas control. Given a LOCA and a concurrent failure of both Category 1 recombiners, three other containment purge supply lines would be available.

The 2CPS\*AOV106 valve is leak rate tested to meet Appendix J requirements. The initial and highest quantified leakage of 2CPS\*AOV106 was approximately 167 scfh per hour. In accordance with TS 3.6.1.2.b, the combined leakage for all penetrations and all valves listed in Table 3.6.3-1 (except for main steam line isolation valves), subject to Type B and C testing when pressurized to Pa (39.75 psig), must be less than or equal to 0.60 La. Valve 2CPS\*AOV106 is listed on TS Table 3.6.3-1. The value for 0.60 La is 494.640 scfh. With 2CPS\*AOV106 leaking at its maximum observed rate, the combined leakage for Type B and C testing is currently equal to 314.419 scfh. Therefore, it can be concluded that operation with 2CPS\*AOV106 leakage in excess of TS criterion specified in TS surveillance 4.6.1.7.2 does not lead to non-compliance with TS 3.6.1.2.b.

During the testing on April 23, 1991, the initial leakage of valve 2CPS\*AOV106 was approximately 167 scfh. This leakage was subsequently reduced to approximately 60 scfh following a purge with nitrogen while the valve was open. The licensee stated that this decrease in leakage was indicative of foreign material on the valve seat being partially removed during the purging operation. A similar failure had occurred during testing in January 1991;



on that occasion, subsequent testing after purging was acceptable. These tests indicate that the leakage was apparently due to foreign material on the valve seat rather than an impending catastrophic failure of the resilient seal material used for the seat material in the purge valves. The licensee concluded, after reviewing all current and past testing data for the CPS valves, that the failure of 2CPS\*AOV106 to meet its leak rate limit was not indicative of resilient seal material degradation, but rather was apparently due to foreign material on the valve seat. The staff agrees with the licensee's conclusion.

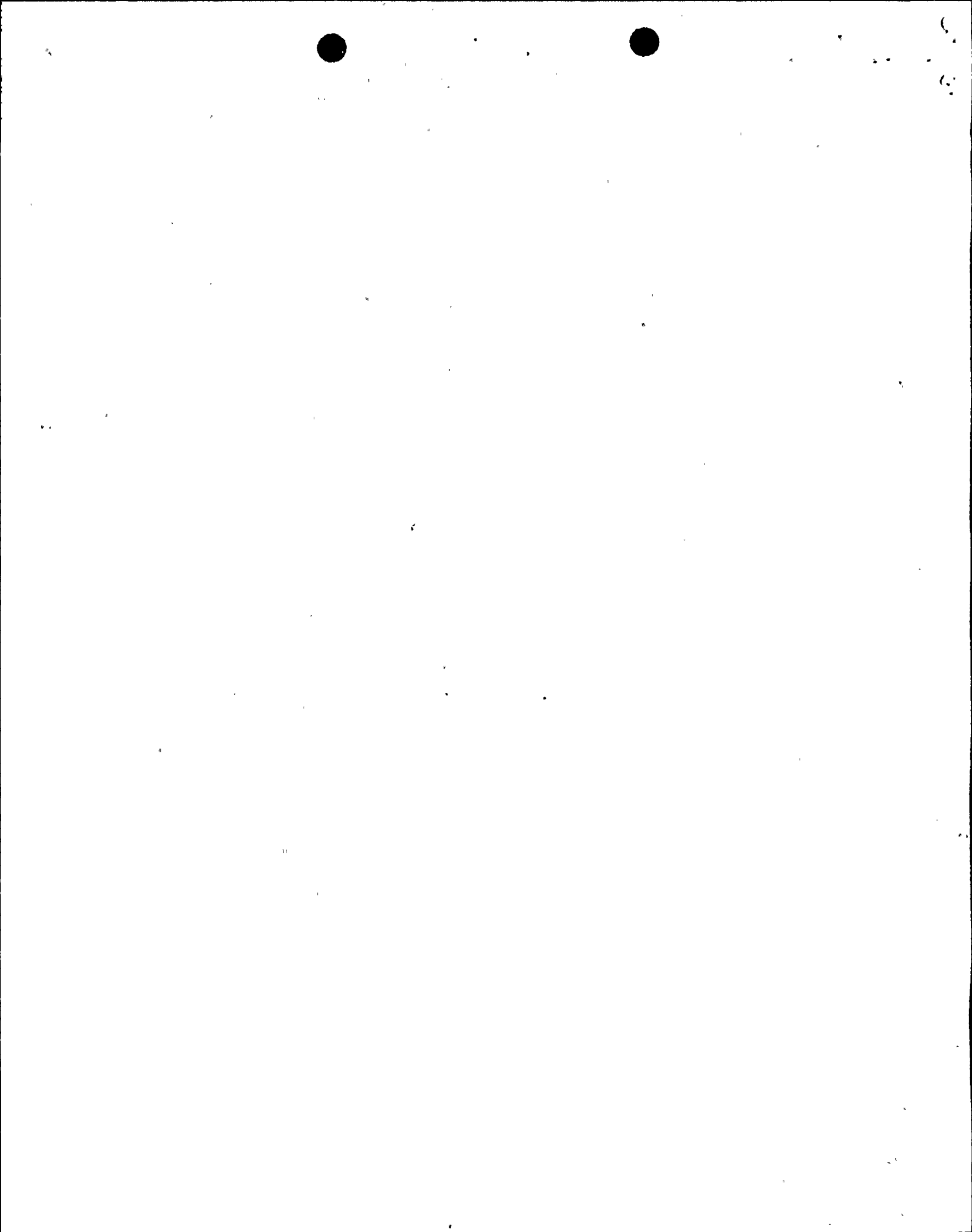
### 3.0 STATEMENT OF EMERGENCY CIRCUMSTANCES

The emergency situation developed on April 23, 1991, during performance of the surveillance requirements of TS 4.6.1.7.2, when primary containment purge valve 2CPS\*AOV106 failed the leakage test criterion of 4.38 scfh. This test is required to be performed every 92 days; while the valve had failed during the prior test it was subsequently cleaned by purging and retested with acceptable results, and there was no indication prior to April 23, 1991, that the valve would again fail to meet the test criterion. Thus the circumstance could not have been avoided. The licensee requested a TWOC on April 24, 1991, and submitted an emergency TS change request on April 29, 1991.

The leaking valve (2CPS\*AOV106) is located inside the drywell. The drywell is inaccessible during plant operation since the drywell atmosphere is nitrogen which must be maintained during plant operation. Action b. of TS 3.6.1.7 requires the plant to be in cold shutdown within 60 hours if one or more of these valves fail their leakage limits. Therefore, a plant shutdown would have been required to access the inoperable valve and to repair it. The proposed TS changes would permit continued operation with valve 2CPS\*AOV106 inoperable (provided the affected penetration is maintained isolated by valves 2CPS\*AOV104 and 2CPS-V6) until the plant is shut down to permit repair of the leaking valve.

### 4.0 STAFF CONCLUSION

The staff has concluded that the licensee has made a timely amendment application once the problem was analyzed and defined. The staff has determined that if the changes are not granted, the plant's TS require prompt reactor shut down due to failure of valve 2CPS\*AOV106 to meet its operability requirements. Therefore, the staff has concluded that the licensee has justified the need for emergency action, and that the changes are necessary and proper. The proposed changes to the TS are, therefore, acceptable. The staff also notes that the licensee has committed to comply with TS 3.6.1.7 Action b. if any of the remaining seven valves fail to pass the acceptance criteria of TS 4.6.1.7.2 during any subsequent tests.



## 5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION

The Commission has provided standards for determining whether a significant hazards consideration exists (10 CFR 50.92(c)). A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of new or different kind of accident from an accident previously evaluated; or (3) involve a significant reduction in a margin of safety.

The following evaluation, by the licensee and with which we agree, demonstrates that the proposed amendment does not involve a significant hazards consideration.

Nine Mile Point can be operated with the incorporation of the changes in the proposed amendment. 10 CFR 50.91 requires that at the time a licensee requests an amendment, it must provide the Commission its analysis using the standards in 10 CFR 50.92 concerning the issue of no significant hazards consideration. Therefore, in accordance with 10 CFR 50.91, the following analysis has been performed:

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes will not involve a significant increase in the probability or consequences of an accident previously evaluated. The failure of CPS components is not an initiating event for any accident analyses previously evaluated in the USAR. The proposed CPS configuration will not impact any of the USAR accident analyses. The resultant leakage through the affected containment penetration based on test measurements and the combined leak rate is less than that assumed by radiological evaluations of design bases events. Therefore, the radiological conclusions in the USAR will remain valid. Moreover, the CPS is classified nonessential with the exception of the primary containment penetration and its associated isolation valves and is not required for safe shutdown. In the unlikely event the CPS is needed for combustible gas control, three separate CPS purge lines will be readily available.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not create the possibility of a new or different kind of accident from any previously evaluated.

The proposed change will not create the possibility of a new or different accident from any previously evaluated. No new operational modes will result from the proposed changes. The CPS isolation valves (2CPS\*A0V104 and 2CPS\*A0V106) will be maintained shut as required in the event





an isolation is required. A single active failure will not affect the position of these valves. The remaining CPS isolation valves test results and a review of previous test results since 1986 demonstrate that generic resilient seal deterioration is not indicated such that a different type of accident is not created.

The operation of Nine Mile Point Unit 2, in accordance with the proposed amendment, will not involve a significant reduction in a margin of safety.

The proposed amendment will not involve a significant reduction in the margin of safety. Given the historical data for this surveillance on 2CPS\*AOV106 and other CPS isolation valves, seal degradation and subsequent gross failure is not indicated. Each remaining CPS isolation valve has been leak tested with results that are well below the surveillance limit. Furthermore, the time period that the plant is operating under this proposed change will be limited to the next shutdown or September 30, 1991, whichever is earlier. Containment isolation valve 2CPS\*AOV106 will be restored to operable status prior to restart of the unit from the outage.

Based on the foregoing, the Commission has concluded that the standards of 10 CFR 50.92 are satisfied. Therefore, the Commission has made a final determination that the proposed amendment does not involve a significant hazards consideration.

#### 6.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

#### 7.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has made a final no significant hazards consideration finding with respect to this amendment. Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.



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## 8.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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