



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 54 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 June 7, 1993, Niagara Mohawk Power Corporation (the licensee) submitted a request for changes to the Nine Mile Point Nuclear Station, Unit 2 (NMP-2), Technical Specifications (TSs). The requested changes would revise TS 3/4.8.1, "AC Sources-Operating," and associated Bases to eliminate unnecessary diesel generator (DG) testing when a DG or an offsite power source becomes inoperable. The changes were proposed to increase DG reliability and the overall level of plant safety by reducing the stresses on the DGs caused by unnecessary testing. The proposed amendment would also make additional changes to TS 3/4.8.1 to further enhance DG reliability and incorporate certain administrative changes.

The NMP-2 Emergency AC Power system is divided into three physically separate and electrically independent divisions designated Divisions I, II, and III. Divisions I and II supply power to all of the Emergency Core Cooling systems, with the exception of the High Pressure Core Spray (HPCS) system. The HPCS system and related equipment are solely supplied by Division III power. All three divisions are normally energized from two offsite sources via reserve station service transformers. Each division has a standby AC power system (standby DG) available in the event offsite power is lost.

The reliability of DGs during normal plant operation is demonstrated by routine surveillance testing required by the NMP-2 TSs. The frequency of such testing is based on past performance with increased testing required to demonstrate continued reliability when test failures occur. In addition to these normal surveillance tests, the TSs require DG testing whenever an offsite power source is lost or if a DG is declared inoperable for a reason other than preplanned preventive maintenance. The purpose of the latter testing is to verify that there is no common mode problem that could affect the remaining DGs and to provide additional assurance that the DGs are, in fact, operable during those conditions when they might be called upon.

While the additional testing described above provides assurance that the DGs are operable, the demands of testing cause additional wear on the diesel components. Operational experience has shown that the TSs have required DG testing when there was clearly no reason to believe that common mode failure was a possibility. Such testing does not contribute to improved DG

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reliability and is considered excessive. Excessive testing is detrimental to the mechanical components and could contribute to an overall reduction in the reliability of a DG to start and perform its intended function. In view of these considerations, the licensee has proposed changes to the TSs that would eliminate unnecessary DG testing when a DG or an offsite power source becomes inoperable.

2.0 EVALUATION

2.1 Testing of Operable DGs When a DG Becomes Inoperable

TS 3.8.1.1, Actions b, c, d, and g, currently require that the operable DGs be started and loaded to demonstrate operability in the event a DG becomes inoperable due to any cause other than preplanned preventive maintenance or testing. The intent of this additional testing is, in part, to determine if a common mode failure exists and, in part, to provide assurance that the remaining operable DGs are capable of supplying emergency power. This requirement can result in unnecessary testing of otherwise operable DGs when a DG is declared inoperable and the cause does not impact the operable DGs (i.e., no common mode failure exists).

The licensee has proposed to change TS 3.8.1.1, Actions b, c, d, and g, to allow verification that the cause of a DG being inoperable does not impact the operability of the operable DGs. This change would allow plant personnel to determine whether the potential for a common mode failure exists rather than require unnecessary testing of the operable DGs. The licensee has also proposed changes to the associated Bases that would discuss the actions required to verify that the cause of a DG being inoperable does not impact the operable DGs.

The normal TS surveillance testing schedule established in accordance with Generic Letter (GL) 84-15, "Proposed Staff Actions to Improve and Maintain Diesel Generator Reliability," demonstrates acceptable reliability and assures that operable DGs are capable of performing their intended safety functions. A failure of a different DG does not reduce the reliability of the operable AC sources as demonstrated by the previous TS surveillance testing, provided the potential for a common mode failure has been examined and dismissed. The licensee has stated that the Divisions I and II DGs have each incurred only 2 failures in their last 100 valid tests. The Division III DG has had no failures in its last 100 valid tests.

The staff agrees that, once the potential for common mode failure has been examined and dismissed, testing beyond the normal surveillance schedule previously described is excessive and does not contribute to improved DG reliability. Therefore, since the proposed changes will allow for verification that the cause of a DG being inoperable does not impact the operability of the remaining DGs and will result in the elimination of unnecessary testing, the staff finds these proposed changes to be acceptable. In addition, the staff has no objections to the proposed changes to the associated Bases.



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2.2 Loading an Operable DG to Offsite Power Source When a DG Becomes Inoperable

TS 3.8.1.1, Actions b, c, d, and g, currently require that the operable DGs be started and loaded to demonstrate their operability in the event any DG becomes inoperable due to any cause other than preplanned maintenance or testing. As discussed in Information Notice (IN) 84-69, "Operation of Emergency Diesel Generators," when a DG is operated connected to offsite or nonvital loads, the emergency power is not independent of disturbances on the nonvital and offsite power systems that can adversely affect emergency power availability. Therefore, DG availability can be adversely affected by a demonstration of operability requiring connection of the operable DGs to offsite power sources and associated nonvital loads. At a time when at least one DG is already inoperable, the current TS Actions could increase the risk of losing the remaining operable DGs.

The licensee has proposed that the requirement in TS 3.8.1.1., Actions b, c, d, and g, to load a DG to an offsite power source be deleted. In those situations where a DG is declared inoperable and a common mode failure cannot be ruled out, the remaining DGs would be started but not loaded. The licensee has stated that their operating procedures do contain limitations on the length of time that a DG can be operated unloaded. The proposed TS change would not preclude loading a DG as necessary but would provide flexibility as to when this loading occurs. The staff agrees that the proposed TS change will reduce the risk of offsite power disturbances affecting DG reliability and, therefore, finds it acceptable.

2.3 Deletion of Word "Preventive"

TS 3.8.1.1., Actions b, c, and d, currently require that the operable DGs be started and loaded to offsite power to demonstrate operability in the event any DG becomes inoperable due to any cause other than preplanned preventive maintenance or testing. The intent of this exclusion is to require additional testing only in those cases where a potential for a common mode failure exists.

This requirement would cause unnecessary testing of the operable DGs in the event of preplanned corrective maintenance. Corrective maintenance is considered work that is not required to be performed to maintain DG operability. Accordingly, the condition requiring corrective maintenance has not prevented the DG from performing its intended function. The current requirements could delay minor corrective maintenance to preclude having to demonstrate the operability of the remaining DGs. The licensee has, therefore, proposed deletion of the word "preventive" from TS 3.8.1.1, Actions b, c, and d.

The staff notes that previously discussed changes to TS 3.8.1.1, Actions b, c, and d, will require that verification be made that the cause of a DG being inoperable does not impact the operability of the remaining DGs. This eliminates staff concerns of corrective maintenance possibly masking any



potential common mode failures. The staff also notes that the licensee has stated that if during the performance of preplanned maintenance it is discovered that one or more DGs are in fact inoperable and require additional maintenance to restore them to operable status, plant personnel will either verify that the cause of the DGs being inoperable does not impact the operability of the other DGs or perform the required surveillance testing. In view of these considerations, the staff finds the proposed change to be acceptable.

2.4 Deletion of Diesel Generator Testing Following Inoperability of an Offsite Power Source

TS 3.8.1.1, Actions a and f, require that the specified DGs be started and loaded to offsite power to demonstrate their operability in the event an offsite source becomes inoperable. The intent of this additional testing is to provide added assurance that the operable DGs are capable of supplying emergency power when the offsite AC sources are degraded.

The normal TS surveillance testing schedule established in accordance with GL 84-15 provides assurance that the operable DGs are capable of performing their intended safety functions. The inoperability of one or both offsite AC sources in no way affects the reliability of the operable diesel generators. In addition, GL 84-15 encouraged licensees to delete testing of DGs as a result of other systems or components becoming inoperable.

The licensee has stated that the most probable cause of an offsite AC power source becoming inoperable is severe weather or an off-normal grid condition. The severe weather or off-normal grid conditions can also cause the loss of a DG if the DG is tied to the offsite source. IN 84-69 advised licensees against loading a DG to a potentially unstable offsite grid. The loss of an offsite AC source will automatically start the associated DG. To require the remaining operable DGs to be started and loaded to offsite power increases the risk of losing all AC power to the safety buses. Diesel generator availability is, therefore, adversely impacted by connecting DGs to offsite sources when the offsite sources are degraded.

The licensee has proposed that TS 3.8.1.1., Actions a and f, be changed to delete the requirement to demonstrate that the DGs are operable when one or both offsite power sources are found to be inoperable. As previously discussed, the staff considers the normal TS surveillance testing sufficient to demonstrate acceptable reliability and provide assurance that the DGs are capable of performing their intended function. Therefore, this testing is considered excessive and should be eliminated. The staff agrees that loss of an offsite AC power supply does not imply any loss of DG reliability or common mode failure. Based on the above, the staff finds the licensee's proposal to eliminate this testing acceptable.

2.5 Verification of Operability of Redundant Equipment

TS 3.8.1.1, Action e, currently requires that, within 2 hours of the Division I or II DG becoming inoperable, all required systems, subsystems, trains, components and devices that depend on the remaining operable Division I or II DG as a source of emergency power be verified as operable. If the condition cannot be met, the plant is required to be placed in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours. This Action requirement is intended to provide assurance that a loss of offsite power, during the period that the Division I or II DG is inoperable, will not result in a complete loss of safety function of critical systems.

There are redundant systems, subsystems, trains, components and devices which depend on DGs as a source of emergency power that do not represent a significant safety function or critical systems. This is indicated by their associated TS Action Statements which allow continued plant operation for a limited time when all redundant components are determined inoperable. As a result, TS 3.8.1.1, Action e, can result in an unnecessary plant shutdown when the current TS Action Statements for the affected equipment allow continued plant operation for a period longer than 2 hours when both pieces of redundant equipment are inoperable.

The licensee has stated that the current Action Statements for the affected equipment should determine if an immediate plant shutdown is required since they have been established to support safe operation based upon the effect of the loss of the equipment's safety function(s). The licensee has, therefore, proposed to change TS 3.8.1.1, Action e, to add the option of declaring inoperable the redundant system, subsystem, train, component, or device served by the inoperable DG and taking the actions required for both divisional systems, subsystems, trains, components, or devices being inoperable versus shutting down the plant.

The licensee has also proposed to add the word "redundant" to TS 3.8.1.1, Action e, to remove the requirement to verify operability of equipment which is served by only one DG. The accident analyses do not take credit for operation of equipment which is not served by both DGs since a single failure during a design basis accident would prevent such equipment from performing its safety function. In addition, there are redundant systems/components that are supplied emergency power by both DGs, but are not required for safe shutdown of the plant. In both cases, loss of function of these components is not a threat to plant safety and verification of operability, in the event of an inoperable DG, is not necessary. The licensee has, therefore, proposed to add the word "redundant" to Action e and revise the Bases for TS 3.8.1.1. to clearly define which redundant equipment is required to be operable per Action e.

The staff noted that the proposed revisions to TS 3.8.1.1, Action e, will provide the same level of safety for significant critical systems while allowing the operational flexibility intended for less critical emergency

powered systems/components. The staff agrees that the current action requirements for the affected equipment should determine if an immediate plant shutdown should be initiated since they have been established to support safe operation based upon the effect of the loss of the equipment's safety function. If the Action requirement for both redundant systems/components being inoperable is less than 72 hours, the Action requirements for both redundant components not being capable of performing their safety function(s) must be followed. The staff finds the proposed actions to be consistent with the intended level of safety, as described in the TSs, for the affected equipment and, therefore, acceptable. The staff has no objections to the related changes to the TS Bases that have been proposed.

2.6 Deletion of Reference to TS 3.7.1.1

TS 3.8.1.1, Action d, currently requires that when the Division III DG is found to be inoperable, the DG must be restored to an operable status within 72 hours or HPCS declared inoperable and the Actions required by TSs 3.5.1 and 3.7.1.1 be taken. TS 3.7.1.1 provides operability requirements for the Plant Service Water (PSW) system. The PSW system consists of two loops, Division I and Division II. The licensee has proposed that the reference to TS 3.7.1.1 in TS 3.8.1.1, Action d, be deleted since inoperability of the Division III DG does not affect the operability of the Division I or II PSW system loops. The staff finds the proposed change acceptable since it is administrative in nature and does not affect the design or performance of the DG.

2.7 Deletion of Word "Test" from the Note in TS 3.8.1.1

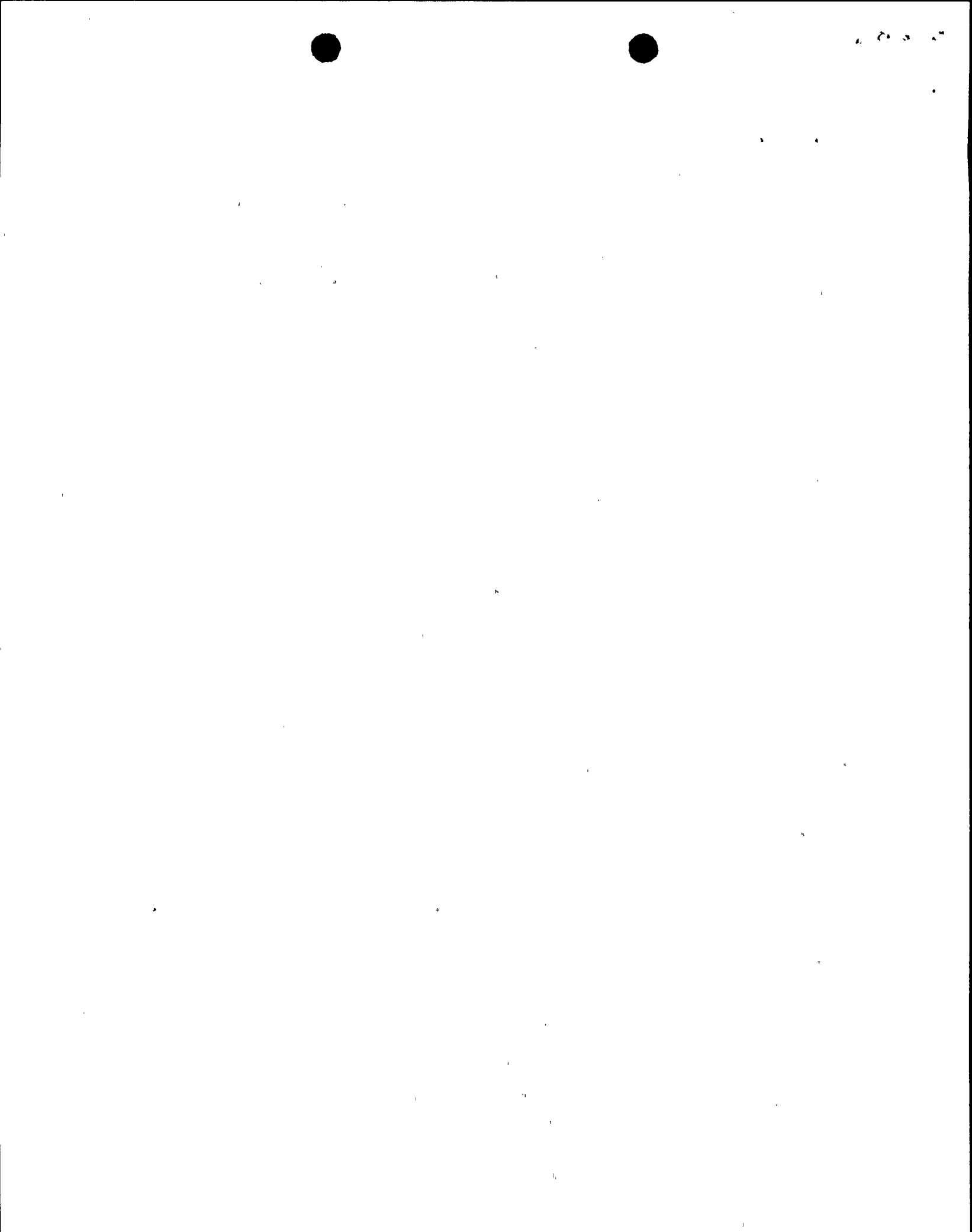
TS 3.8.1.1, Actions b, c, d, and g, currently require that a "test" be performed to demonstrate DG operability. This requirement is reflected in a note (indicated by an asterisk) in TS 3.8.1.1. Since "test" will no longer always be required to these Action requirements when the previously discussed TS changes are implemented, the licensee has proposed that the word "test" be deleted from the note. This staff finds this proposed change to be acceptable since it makes the wording in the note consistent with the other changes that have been determined to be acceptable.

3.0 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.

4.0 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 previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (58 FR 36440). 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.

5.0 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.

Principal Contributor:
John E. Menning

Date: December 15, 1993



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December 15, 1993

Docket No. 50-410

Mr. B. Ralph Sylvia
Executive Vice President, Nuclear
Niagara Mohawk Power Corporation
301 Plainfield Road
Syracuse, New York 13212

Dear Mr. Sylvia:

SUBJECT: ISSUANCE OF AMENDMENT FOR NINE MILE POINT NUCLEAR STATION,
UNIT 2 (TAC NO. M86757)

The Commission has issued the enclosed Amendment No. 54 to Facility Operating License No. NPF-69 for the Nine Mile Point Nuclear Station, Unit 2. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated June 7, 1993.

The amendment revises TS 3/4.8.1, "AC Sources-Operating," and associated Bases to eliminate unnecessary diesel generator testing when a diesel generator or an offsite power source becomes inoperable. The amendment is intended to increase diesel generator reliability and the overall level of plant safety by reducing the stresses on the diesel generators caused by unnecessary testing. The amendment also makes additional changes to TS 3/4.8.1 to further enhance diesel generator reliability and incorporate certain administrative changes.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:

John E. Menning, Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 54 to NPF-69
2. Safety Evaluation

cc w/enclosures:
See next page

LA:PDI-1	PM:PDI-1 <i>AMB</i>	EELB <i>CAB</i>	OGC <i>12/14/93</i>	D:PDI-1	
CVogon <i>CV</i>	JMenning: <i>for</i> smm	CBerlinger		RACapra <i>RC</i>	
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