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ACCESSION NBR: 8410110081 DOC. DATE: 84/10/05 NOTARIZED: YES DOCKET #
 FACIL: 50-410 Nine Mile Point Nuclear Station, Unit 2, Niagara Moha 05000410
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 LEMPGES, T. E. Niagara Mohawk Power Corp.
 RECIP. NAME RECIPIENT AFFILIATION
 SCHWENCER, A. Licensing Branch 2

SUBJECT: Forwards responses to SER Open Items 147, 149, 155 & 176.
 Encls will be included in next FSAR amend.

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October 5, 1984
(NMP2L 0190)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Nine Mile Point Unit 2
Docket No. 50-410

Dear Mr. Schwencer:

Enclosed for your use and information are the Nine Mile Point Unit 2 responses to Nuclear Regulatory Commission's Safety Evaluation Report open items. This information has been previously discussed with your staff and is submitted to aid your review of the Unit 2 license application for the resolution of these open items. This submittal includes information for Safety Evaluation Report open items 147, 149, 155, 176.

The enclosed will be included in the next Final Safety Analysis Report Amendment.

Very truly yours,



T. E. Lempges
Vice President
Nuclear Generation

TEL/NLR:ja
Enclosure
xc: Project File (2)

R. Gramm, NRC Resident Inspector

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
Niagara Mohawk Power Corporation)
(Nine Mile Point Unit 2))

Docket No. 50-410

AFFIDAVIT

T. E. Lempges, being duly sworn, states that he is Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

T. E. Lempges

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 5th day of October, 1984.

Christine Austin
Notary Public in and for
Onondaga County, New York

My Commission expires:

CHRISTINE AUSTIN
Notary Public in the State of New York
Qualified in Onondaga Co. No. 4787687
My Commission Expires March 30, 1985

CHRISTINE AUSTIN
140th Street in the State of New York
Printed in Orange Co. No. 470207
by American Express March 30, 19__

Nine Mile Point Unit 2 FSAR

Waste gas includes headers and cover gas system outside of containment in addition to decay or storage system. Include a list of systems containing radioactive materials that are excluded from the program and provide justification for exclusion.

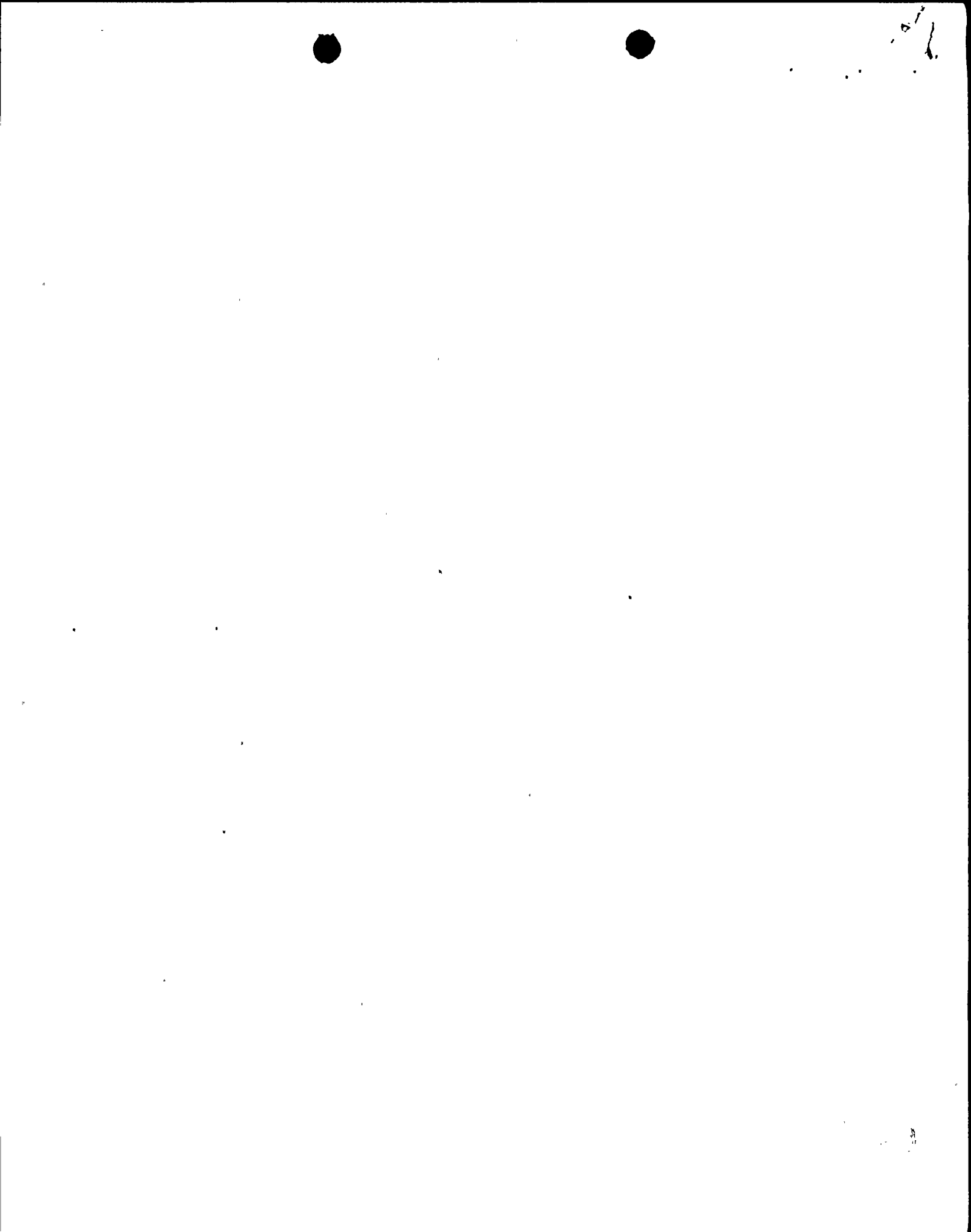
Testing of gaseous systems should include helium leak detection or equivalent testing methods.

A program should be considered to reduce leakage potential release paths due to design and operator deficiencies as discussed in our letter dated October 17, 1979, to all operating nuclear power plants regarding North Anna and related incidents.

Nine Mile Point Unit 2 Position

A program has been developed to monitor leakage from systems outside the containment which could be used to transport highly radioactive fluids in a post-accident condition. This program includes the following features:

1. The implementation of a periodic visual inspection program consisting of a combination of general inspections and detailed system walkdown of liquid systems. These inspections shall be performed on accessible portions of applicable systems during system operational testing or by evaluation of leakage at lower pressures during operation.
2. Systems containing gases are to be tested by use of tracer gases (helium, freon or DOP) by pressure decay testing or by metered makeup tests.
3. An aggressive maintenance program will be used to assign high priorities to leakage-related Maintenance Work Requests (MWRs).
4. Preparation of systems list, identifying specific methods used to test systems, the system involved, and frequency of testing.
5. Records shall be maintained on the tests and inspections performed and leakage related MWRs. These records shall be used to identify chronic and generic leakage problems in order to implement modifications and/or corrective maintenance measures to keep leakage as low as practical.



Nine Mile Point Unit 2 FSAR

These measures will be implemented prior to full power operation. Four months prior to fuel load, NMPC will submit a report to the NRC Staff summarizing the program and all recorded leakage obtained during preop testing as well as corrective maintenance performed as a direct result of the evaluation of this leakage. The report will also identify general leakage criteria to be applied during the first fuel cycle as the basis for implementing corrective maintenance actions. Prior to the start of the second fuel cycle, NMPC will revise the general criteria as necessary based on the experience gained during the Unit 2 first fuel cycle. The revised criteria shall then be used as the basis for long-term leakage monitoring activity at Unit 2.

Safety Parameter Display System

The NMP2 selection of parameters to be displayed to detect critical safety functions is based on the recommended subset of Reg. Guide 1.97 monitored parameters with additional parameters added to match the BWR Owners Group recommended inputs.

Means are provided to ensure that the data displayed is valid and that the operator is informed on the displays of the appropriate status of invalid or questionable data. This is accomplished in the following manner. Questionable data is displayed with the variable value in white followed by a "Q" character in yellow. Invalid inputs used to calculate a displayed parameter result in the variable status displayed as blanks followed by an "N" character.

The displays used are the BWR Owners Group recommended displays. These displays are described in the final report prepared for the U.S. Department of Energy, Light Water Reactor Safety Technology Management Center, Sandia National Laboratories document number ALO-1003 (SAI 01381-364LJ) entitled "BWR Graphics Display System Dynamic Screening Program." The following is a list of displays.

- a) "Safety Function Status" (Level one display)
- b) "Reactivity Control" (Level two display)
- c) "Core Cooling" (Level two display)
- d) "Cooling System Integrity" (Level two display)
- e) "Containment Integrity" (Level two display)

The only exception to the BWR Owners Group recommended displays is the Level 2 "Radioactive Released" display. This data is contained within and displayed on the digital radiation monitoring system CRT located adjacent to the SPDS CRT.

The verification and validation program is structured after the NSAC report "Verification and Validation for SPDS" NSAC-39 December 1981 which details the following requirements.

- a) Verification that the SPDS display and software design meets the requirement baseline
- b) Internal verification of design and validation/acceptance test procedure development
- c) Testing to validate performance and accuracy requirements against the system requirements.

Nine Mile Point Unit 2 FSAR

I.C.3 SHIFT SUPERVISOR RESPONSIBILITY

FSAR Cross Reference

Sections 13.1, 13.5.1

NUREG-0737 Position

The highest level of corporate management of each licensee shall issue and periodically reissue a management directive that emphasizes the primary management responsibility of the Shift Supervisor for safe operation of the plant under all conditions on his shift and that clearly establishes his command duties.

Plant procedures shall be reviewed to assure that the duties, responsibilities, and authority of the Shift Supervisor and Control Room Operators are properly defined to effect the establishment of a definite line of command and clear delineation of the command decision authority of the Shift Supervisor in the control room relative to other plant management personnel. Particular emphasis shall be placed on the following:

1. The responsibility and authority of the Shift Supervisor shall be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the control room. The idea shall be reinforced that the Shift Supervisor should not become totally involved in any single operation in times of emergency when multiple operations are required in the control room.
2. The Shift Supervisor, until properly relieved of duty, shall remain in the control room at all times during accident situations to direct the activities of Control Room Operators. Persons authorized to relieve the Shift Supervisor shall be specified.
3. If the Shift Supervisor is temporarily absent from the control room during routine operations, a lead Control Room Operator shall be designated to assume the control room command function. These temporary duties, responsibilities, and the authority shall be clearly specified.

Training programs for Shift Supervisors shall emphasize and reinforce the responsibility for safe operation and the



Nine Mile Point Unit 2 FSAR

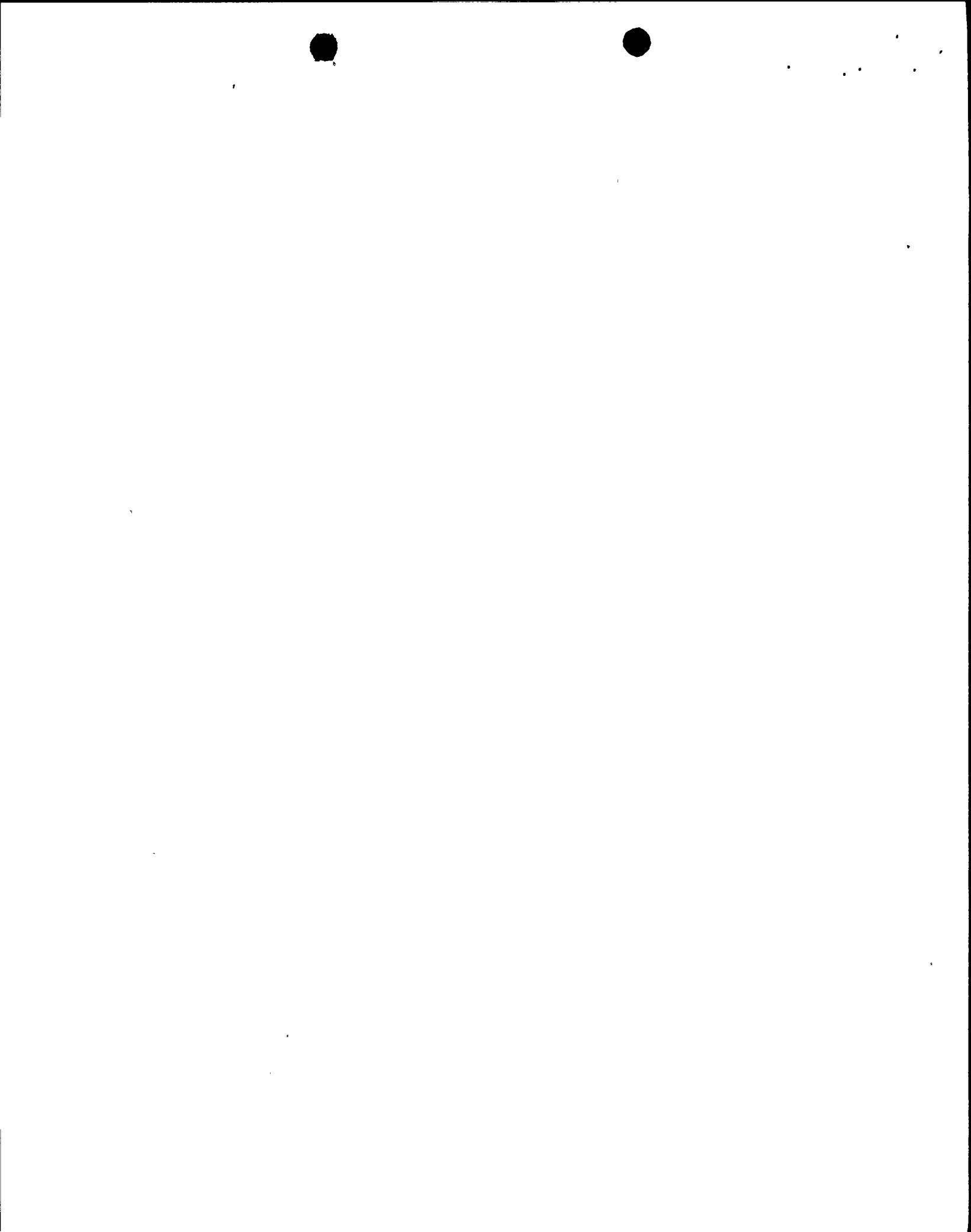
management function the Shift Supervisor is to provide for assuring safety.

The administrative duties of the Shift Supervisor shall be reviewed by the senior officer of each utility responsible for plant operations. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

The following table clarifies this position:

SHIFT SUPERVISOR RESPONSIBILITY (2.2.1.a)

<u>NUREG-0578 Position (Position No.)</u>	<u>Clarification</u>
Highest level of corporate management (1)	V. P. for operations
Periodically reissue (1)	Annual reinforcement of company policy
Management direction (1)	Formal documentation of shift personnel, all plant management, copy to IE region
Properly defined (2.0)	Defined in writing in a plant procedure
Until properly relieved (2.8)	Formal transfer of authority, valid SRO License, Recorded in plant log
Temporarily absent (2.C)	Any absence
Control room defined (2.C)	Includes shift supervisor office adjacent to the control room
Designated (2.C)	In administrative procedures
Clearly specified	Defined in administrative procedures



Nine Mile Point Unit 2 FSAR

NUREG-0578 Position
(Position No.)

Clarification

SRO training

Specified in ANS 3.1
(Draft) Section 5.2.1.8

Administrative duties (4)

Not affecting plant
safety

Administrative duties
reviewed (4)

On same interval as
reinforcement: i.e.,
annual by V. P. for
operation

Nine Mile Point Unit 2 Position

The response to this task is contained in I.A.1.2.

Refer to Task I.A.1.2 position statement for response to
I.C.3.



Nine Mile Point Unit 2 FSAR

I.A.1.2 SHIFT SUPERVISOR RESPONSIBILITIES

FSAR Cross Reference

Sections 13.1, 13.5.1

NUREG-0737 Position

The highest level of corporate management of each licensee shall issue and periodically reissue a management directive that emphasizes the primary management responsibility of the Shift Supervisor for safe operation of the plant under all conditions on his shift and that clearly establishes his command duties.

Plant procedures shall be reviewed to assure that the duties, responsibilities, and authority of the Shift Supervisor and Control Room Operators are properly defined to effect the establishment of a definite line of command and clear delineation of the command decision authority of the Shift Supervisor in the control room relative to other plant management personnel. Particular emphasis shall be placed on the following:

1. The responsibility and authority of the Shift Supervisor shall be to maintain the broadest perspective of operational conditions affecting the safety of the plant as a matter of highest priority at all times when on duty in the control room. The idea shall be reinforced that the Shift Supervisor should not become totally involved in any single operation in times of emergency when multiple operations are required in the control room.
2. The Shift Supervisor, until properly relieved, shall remain in the control room at all times during accident situations to direct the activities of Control Room Operators. Persons authorized to relieve the Shift Supervisor shall be specified.
3. If the Shift Supervisor is temporarily absent from the control room during routine operations, a lead control room operator shall be designated to assume the control room command function. These temporary duties, responsibilities, and authorities shall be clearly specified.

Training programs for Shift Supervisors shall emphasize and reinforce the responsibility for safe operation and the



Nine Mile Point Unit 2 FSAR

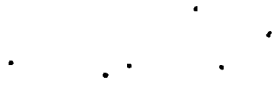
management function of the Shift Supervisor is to provide for assuring safety.

The administrative duties of the Shift Supervisor shall be reviewed by the senior officer of each utility responsible for plant operations. Administrative functions that detract from or are subordinate to the management responsibility for assuring the safe operation of the plant shall be delegated to other operations personnel not on duty in the control room.

The following table provides clarification to the above position.

SHIFT SUPERVISOR RESPONSIBILITY (2.2.1.a)

<u>NUREG-0578 Position .</u> <u>(Position No.)</u>	<u>Clarification</u>
Highest level of corporate management (1)	V. P. for operations
Periodically reissue (1)	Annual reinforcement of company policy
Management direction (1)	Formal documentation of shift personnel, all plant management, copy to IE region
Properly defined (2.0)	Defined in writing in a plant procedure
Until properly relieved (2.B)	Formal transfer of authority, valid SRO license, recorded in plant log
Temporarily absent (2.C)	Any absence
Control room defined (2.C)	Includes shift supervisor office adjacent to control room
Designated (2.C)	In administrative procedures
Clearly specified (2.C)	Defined in administrative procedures



Nine Mile Point Unit 2 FSAR

NUREG-0578 Position
(Position No.)

Clarification

SRO training (3)

Specified in ANS 3.1
(Draft) Section ,
S.2.1.8

Administrative duties (4)

Not affecting plant
safety

Administrative duties
reviewed (4)*

On same interval as
reinforcement: i.e.,
annual by V. P. for
operations



NINE MILE POINT UNIT 2 POSITION

Prior to fuel loading and annually thereafter, the Vice President-Nuclear Generation shall issue a management directive that emphasizes the primary management responsibility of the Station Shift Supervisor (SSS) for safe operation of the plant under all conditions on his shift and clearly establishes his command duties.

Plant procedures are written to assure that the duties, responsibilities and authority of the SSS and other licensed control room operators are properly defined to effect the chain of command.

In the future, administrative duties of the SSS will be reviewed annually after fuel load by the Vice President-Nuclear Generation to ensure that such functions don't detract from safe plant operation.

SSS RESPONSIBILITIES

The Station Shift Supervisor is in charge of all operations on his assigned shift. Under the general direction of the Supervisor Operations Nuclear, his function includes direction of shift activities, authorization of equipment releases for maintenance, ensuring that the plant is operated safely and within the license and technical specifications and ensuring that plant operations are conducted in accordance with approved procedures. As overall supervisor of operations for his shift, the Station Shift Supervisor should avoid becoming personally involved in the manipulative tasks or details of operation of any one portion of the plant so that he may retain a comprehensive perspective of general station conditions at all times. In an emergency situation, however, should the Shift Supervisor choose to perform manipulative functions to ensure that the plant is in a safe condition, he shall coordinate his actions with the Chief Shift Operator. Whenever he determines that the safety of the reactor is in immediate jeopardy or when operating parameters exceed any of the reactor protection circuit setpoints and automatic shutdown should, but does not occur, he has the responsibility and the authority to order shutdown of the reactor or to personally effect the shutdown.

The Shift Supervisor shall hold an NRC senior reactor operator license. He shall be continuously present at the plant for the duration of his assigned shift until properly relieved by the oncoming Shift Supervisor. It is his responsibility to provide direction for returning the reactor to power following a trip or an unscheduled power reduction.

During (normal operations) periods when the SSS is out of the control room, he designates another SRO the control room command function, as specified by administrative procedures. The SSS or designated replacement shall remain in the control room which ensures maintenance of visual and aural contact with all control room boards.

During emergencies, accidents or incidents requiring special procedures, the Shift Supervisor shall remain continuously in the control room until relieved by the oncoming shift supervisor or a senior licensed operator designated by the Supervisor Operations or higher authority. From the control room, he shall continuously assess the condition of the station and provide general direction for all operating actions.

Training programs for SROs reinforce the responsibility for safe operation and the management function of the control room supervisor to assure safety.

SSS administrative duties have been reviewed, and many of the administrative functions have been assigned to other personnel not involved with the actual operation of the reactor.



Nine Mile Point Unit 2 FSAR

consideration of human factors in the design and layout of the control room.

II.K.1.5 REVIEW OF ESE VALVES

FSAR Cross Reference

Section 6.3

NUREG-0737 Position

Review all safety-related valve positions, positioning requirements, and positive controls to assure that valves remain positioned (open or closed) in a manner to ensure the proper operation of engineered safety features. Also review related procedures, such as those for maintenance, testing, plant and system startup, and supervisory periodic (e.g., daily/shift checks) surveillance to ensure that such valves are returned to their correct positions following necessary manipulations and are maintained in their proper positions during all operational modes.

Nine Mile Point Unit 2 Position

Each system requiring alignment of valves will have a valve lineup provided as a portion of the operating procedures. System test procedures will require performance of a post-test valve lineup to assure restoration to an operable condition. Valve lineups will require double verification and signoff by independent operators. These valve lineups will be verified along with system operation as part of the preoperational test program. This will preclude valves being in a wrong position. Additionally, valve lineups and/or operability checks will be reviewed as part of the checkout of maintenance, surveillance, operations, test, or inspection procedures during the preoperational test phase.

II.K.1.10 OPERABILITY STATUS

FSAR Cross Reference

Section 6.3

NUREG-0737 Position

Review and modify as necessary your maintenance and test procedures to ensure that they require:

- a. Verification, by test or inspection, of the operability of redundant safety-related systems



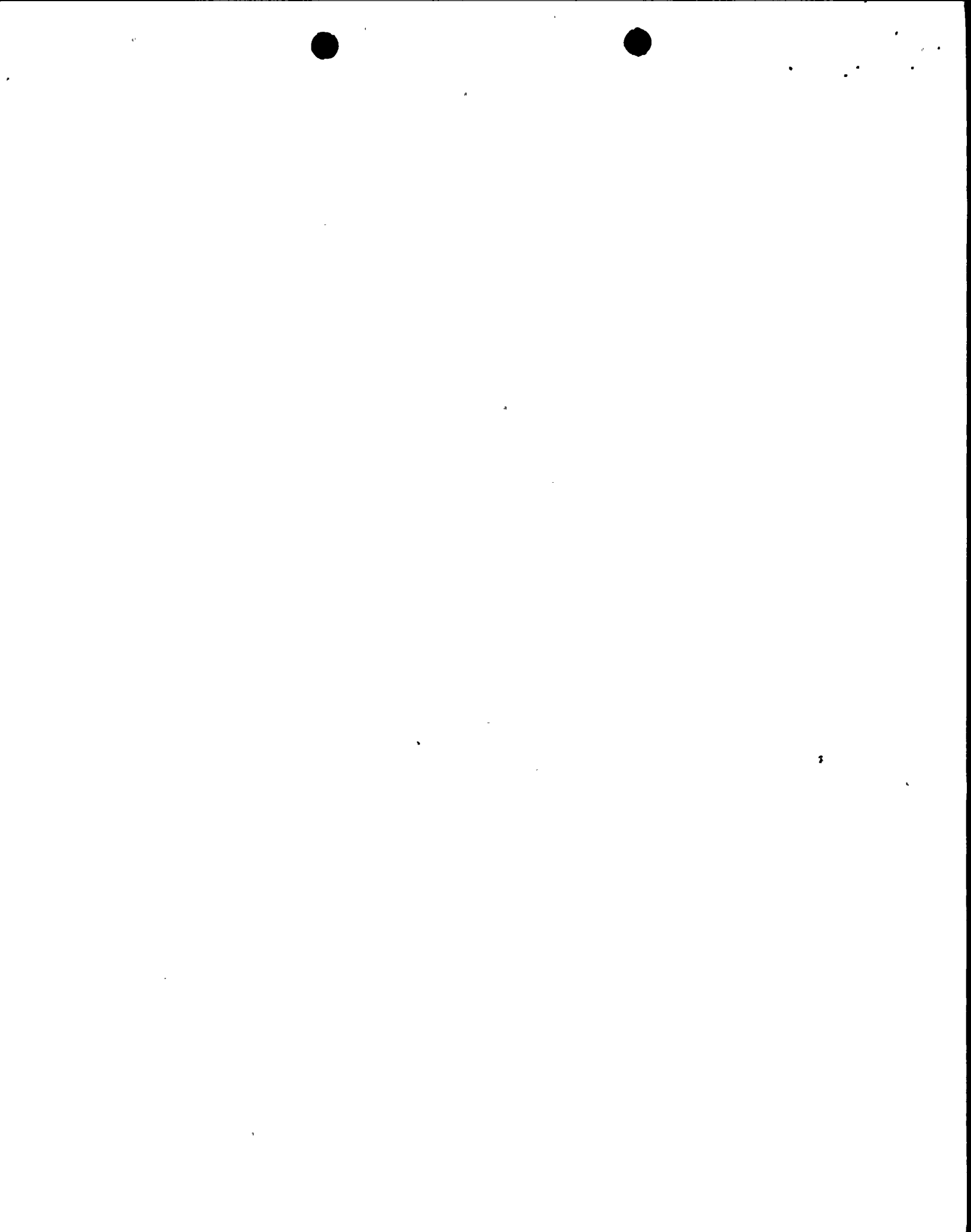
Nine Mile Point Unit 2 FSAR

prior to the removal of any safety-related system from service.

- b. Verification of the operability of all safety-related systems when they are returned to service following maintenance or testing.
- c. Explicit notification of involved reactor operational personnel whenever a safety-related system is removed from and returned to service.

Nine Mile Point Unit 2 Position

NMPC will review all maintenance and test procedures during the preoperational test phase and ensure that they require verification of operability of redundant safety-related systems, as required by technical specifications, prior to the removal of the safety system from service. Explicit notification to and authorization by the Station Shift Supervisor of work on a safety-related system shall be verified as being performed prior to removal of a system from service and prior to its return to service. Verification of the operability of safety-related systems following maintenance or test will be performed as part of the test and restoration of a system to service.



Position

For all boiling water reactor facilities with an operating license, complete the action specified below:

1. Review the description of circumstances described in enclosure 1 of I.E. Bulletin 79-05 and the preliminary chronology of TMI to 3/28/29 accident including enclosure 1 to I.E. Bulletin 79-05A.

Nine Mile Point Unit 2 Position

This review has been completed. Actions resulting from TMI which relate to design changes and/or procedural actions are described as follows:

Question 1a

This review should be directed toward understanding: (1) the extreme seriousness and consequences of the simultaneous blocking of both trains, of a safety system at Three Mile Island Unit 2 plant and other actions taken during the early phases of the accident; (2) the apparent operational errors which led to the eventual core damage; and (3) the necessity to systematically analyze plant conditions and parameters and take appropriate corrective action.

Response

Niagara Mohawk has reviewed the TMI event with an understanding toward the three actions described above. The development of emergency operating procedures and a review of administrative and operating procedures is currently in progress to ensure that TMI considerations described above have been correctly transposed into appropriate procedures.

Question 1b

Operational personnel should be instructed to not override automatic action of engineering safety features unless continued operation of engineering safety features will result in unsafe plant conditions (see Section 5A of this bulletin); and 2) not make operational decisions based solely on a single plant parameter indication when one or more confirmatory indications are available.

1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that this is essential for ensuring transparency and accountability in the organization's operations.

2. The second part of the document outlines the various methods and tools used to collect and analyze data. It highlights the need for consistent data collection procedures and the use of advanced analytical techniques to derive meaningful insights from the data.

3. The third part of the document focuses on the role of technology in data management and analysis. It discusses how modern software solutions can streamline data collection, storage, and processing, thereby improving efficiency and accuracy.

4. The fourth part of the document addresses the challenges associated with data management, such as data quality, security, and privacy. It provides strategies to mitigate these risks and ensure that the data remains reliable and secure throughout its lifecycle.

5. The fifth part of the document concludes by summarizing the key findings and recommendations. It stresses the importance of a data-driven approach in decision-making and the need for continuous monitoring and improvement of the data management process.

Response

Niagara Mohawk emergency operating procedure training addresses these considerations specifically.

Question 1c

All licensee operators and plant management and supervisors with operational responsibilities should participate in this review and such participation shall be documented in plant records.

Response

As part of the training program afforded plant personnel, training for mitigating core damage and use of the emergency operating procedures is provided and documented.

Question 2

Review the containment isolation initiation design and procedures and prepare and implement all changes necessary to initiate containment isolation, whether manual or automatic, of all lines whose isolation does not degrade needed safety features or cooling capability, upon automatic initiation of safety injection.

Response

This analysis has been completed and is described in Section 1.10 of the FSAR.

Question 3

Describe the actions, both automatic and manual, necessary for proper functioning of the auxiliary heat removal systems (e.g., RCIC) that are used when the main feedwater system is not operable. For any manual action necessary, describe in summary form the procedure by which this action is taken in a timely sense.

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Response

Information is incorporated into the emergency procedure guideline which has been submitted to the NRC. Additionally, manual and automatic actions will be described in detail in the operating procedures currently under development.

Question 4

Describe all uses and types of vessel level indication for both automatic and manual initiation to safety systems. Describe other redundant instrumentation which the observer might have to give the same information regarding plant status. Instruct operators to use other available information to initiate safety systems.

Response

Emergency operating procedure training provides instructions for the operators in the indications of vessel level which are used for mitigation of transients and accidents. Additionally, Section 7 of the FSAR provides a description of the vessel level indication which provides automatic initiation of safety systems. In response to Question 421.36, Niagara Mohawk has provided a listing of the post-accident monitoring systems which are used to provide plant status.

Question 5

Review the action directed by the operating procedures and training instructions to ensure that: a) operators do not override automatic actions of engineered safety features, unless continued operation of engineered safety features will result in unsafe plant conditions (e.g., vessel integrity).

Response 5a

The specific operator training to ensure this does not occur are included in the licensed operator training program.

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Question 5b

Operators are provided additional information and instructions to not rely upon vessel level indication alone for manual actions, but to also examine other plant parameter indications in evaluating plant conditions.

Response

The emergency operating procedure training incorporates this additional guidance as part of the instruction.

Question 6

Review all safety related valve positioning requirements and positive controls to ensure that valves remain positioned opened or closed in a manner to ensure the proper operation of engineered safety features. Also review safety related procedures such as those for maintenance testing, plant and system startup and the supervisory periodic (e.g., daily/shift checks) surveillance to ensure that such valves are returned to their correct positions following necessary manipulations and are maintained in their proper positions during all operational modes.

Response

A review of safety related valve positions, positioning requirements and positive controls to assure the valves remain positioned (opened or closed) in a manner to ensure the proper operation of engineered safety features has been conducted as part of the design review process. Also see response to NRC Question 421.28. Procedures for maintenance, plant system startup and periodic surveillance procedures and the verification that valves are returned to their correct positions are addressed in Section 10 of the FSAR.

Question 7

Review your operating modes and procedures for all systems designed to transfer potentially radioactive gases and liquids out of the primary containment to assure that undesired pumping, venting or other releases of radioactive liquids and gases will not occur inadvertently. In particular,

ensure that such an occurrence would not be caused by resetting of engineered safety features, instrumentation. List all such systems and indicate

- a) whether interlocks exist to prevent transfer when high radiation exists;
- b) whether such systems are isolated by the containment isolation signal;
- c) the basis on which continued operability of the above features is assured.

Response

The answer to this question is provided as described in Section 1.10. Safety related isolation signals will be periodically tested in accordance with the Technical Specifications.

Question 8

Review and modify, as necessary, your maintenance and test procedures to ensure that they require a) verification by test or inspection of the operability of redundant and safety related systems prior to removal of any safety related system from service; b) verification of the operability of all safety related systems when they are returned to service following maintenance or test; and c) explicit notification of involved reactor operational personnel whenever a safety related system is removed and returned to service.

Response

Niagara Mohawk will incorporate this guidance in the maintenance and test procedures. This information and a commitment to incorporating these requirements are described in Section 1.10 of the FSAR.

Question 9

Review your prompt reporting procedures for NRC notification to assure that the NRC is notified within one hour of the time the reactor is not in control or expected condition of operation. Further, at that time, an open continuous communication shall be established and maintained with the NRC.

Response

The emergency plan and procedures describe the communications necessary during emergency conditions at Nine Mile Point Unit 2. The emergency plan and procedures are provided in Appendix 13B of the FSAR.

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Question 10

Review operating modes and procedures to deal with significant amounts of hydrogen gas that may be generated during a transient or other accident that would either remain inside the primary system or be released to the containment.

Response

Niagara Mohawk uses an inerted containment and hydrogen recombiners to remove hydrogen gas from the primary containment. Reactor vessel high point vents are provided to allow hydrogen to be released into the primary containment and thereby removed by the hydrogen recombiners. Emergency Operating Procedures describe the use of plant equipment during emergency conditions.

Question 11

Propose changes as required to those technical specifications which must be modified as a result of your implementing the items above.

Response

Technical specification which will be submitted for Nine Mile Point Unit 2 will reflect any changes in procedures or design changes which have resulted from the TMI accident.

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II.K.3.3 Failure of PORV or Safety Valve to Close

Position

Assure that any failure of a PORV or safety valve to close will be reported to the NRC promptly. All challenges to the PORVs or safety valves should be documented in the annual report.

Nine Mile Point Unit 2 Position

Failures of primary system relief or safety valves to close will be reported to the NRC via the licensee event report system.

Additionally, a brief tabulation of all challenges to primary system relief and safety valves occurring during the year will be provided in the annual report.

