

50-220

NRC DISTRIBUTION FOR PART 50 DOCKET MATERIAL 814708

FILE NUMBER

TO:
- Mr. Edson G. Case

FROM:
LeBoeuf, Lamb, Leiby & MacRae
Washington, D. C.
Eugene B. Thomas, Jr.

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5/25/77.

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DESCRIPTION

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PLANT NAME:
Nine Mile Point Unit No. 1 (2-P)
RJL

ENCLOSURE

Amdt. to OL/change to tech specs...notorizedng 5/23/77...consisting of two applications relating to the instrumentation used to monitor drywell suppression chamber differential pressure & suppression chamber water level and certain safety margins assoc. with the suppression chamber support structures....

(16-P) *40 encl.*

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May 25, 1977



*RESIDENT PARTNERS WASHINGTON OFFICE
*ADMITTED TO THE DISTRICT OF COLUMBIA BAR

Mr. Edson G. Case
Acting Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

REGULATORY DOCKET FILE COPY

Re: Niagara Mohawk Power Corporation
Nine Mile Point Nuclear Station
Unit No. 1--Docket No. 50-220

Dear Mr. Case:

As counsel for Niagara Mohawk, I hereby transmit two (2) applications for amendment to Niagara Mohawk's Operating License No. DPR-63 in the above-captioned docket:

I.

We hereby transmit three (3) originals and nineteen (19) copies of the pleading entitled "Application for Amendment to Operating License", as well as forty (40) copies each of Attachments A and B which are the technical information supporting the request for the change in the license.

This request relates to the instrumentation which is used to monitor drywell suppression chamber

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differential pressure and suppression chamber water level.


II.

Enclosed are three (3) originals and nineteen (19) copies of a pleading entitled "Application for Amendment to Operating License". Also enclosed are forty (40) copies each of Attachments A and B to the pleading which provide the technical information supporting the request for the amendment to the license.

This requested change relates to certain safety margins associated with the suppression chamber support structures.

On May 19, 1977, I transmitted to you a request for change in the operating license together with certain supporting information. Through my error, this was an incorrect filing and should be disregarded. I am sorry for the inconvenience I may have caused.

Very truly yours,


Eugene B. Thomas, Jr.
LeBoeuf, Lamb, Leiby & MacRae

Enclosures



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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)

NIAGARA MOHAWK POWER CORPORATION)
(Nine Mile Point Nuclear Station)
Unit No. 1))

Docket No. 50-220

APPLICATION FOR AMENDMENT

TO

OPERATING LICENSE

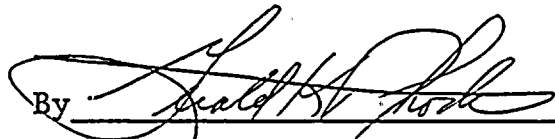
Pursuant to Section 50.90 of the regulations of the Nuclear Regulatory Commission, Niagara Mohawk Power Corporation, holder of Facility Operating License No. DPR-63, hereby requests that Specification 3.6.2 and 4.6.2 of the Technical Specifications and Bases set forth in Appendix A to that License be amended. This proposed change has been concurred with by the Site Operations Review Committee and Safety Review and Audit Board.

The proposed Technical Specification change is set forth in Attachment A to this application. Supporting Information, which demonstrates that the proposed change does not involve a significant hazards consideration, is set forth in Attachment B. The proposed change would not authorize any change in the types or any increase in the amounts of effluents or any change in the authorized power level of the facility.




WHEREFORE, Applicant respectfully requests that Appendix A to Facility Operating License No. DPR-63 be amended in the form attached hereto as Attachment A.

NIAGARA MOHAWK POWER CORPORATION

By 
Gerald K. Rhode
Vice President-Engineering

Subscribed and sworn to before me this 23rd day of May, 1977.


NOTARY PUBLIC

HAZEL J. CARRICK
Notary Public in the State of New York
Qualified in Onon. Co. No. 4524460
J. Co. Expires March 30, 1978

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
5708 SOUTH CAMPUS DRIVE, CHICAGO, ILLINOIS 60637

PHYSICAL CHEMISTRY

Attachment A

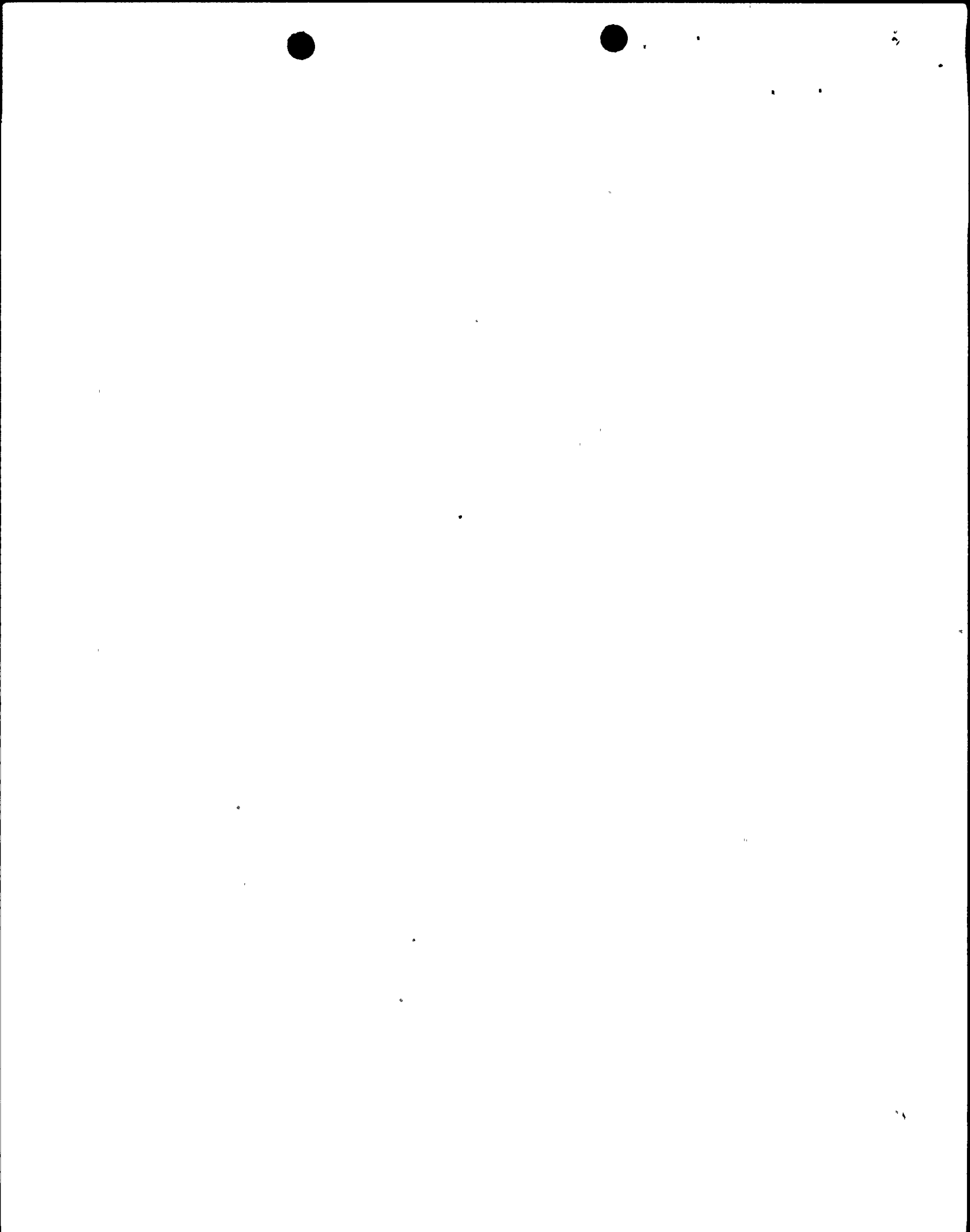
Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Proposed Changes to Facility Operating License

Attached are revisions to Pages 188, 190, 236
and 237. Also attached are additional Pages
232b and 232c.



LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

3.6.2 PROTECTIVE INSTRUMENTATION

Applicability:

Applies to the operability of the plant instrumentation that performs a safety function.

Objective:

To assure the operability of the instrumentation required for safe operation.

Specification:

- a. The set points, minimum number of trip systems, and minimum number of instrument channels that must be operable for each position of the reactor mode switch shall be as given in Tables 3.6.2a to 3.6.2l.

If the requirements of a table are not met, the actions listed below for the respective type of instrumentation shall be taken.

- (1) Instrumentation that initiates scram-control rods shall be inserted.

4.6.2 PROTECTIVE INSTRUMENTATION

Applicability:

Applies to the surveillance of the instrumentation that performs a safety function.

Objective:

To verify the operability of protective instrumentation.

Specification:

- a. Sensors and instrument channels shall be checked, tested and calibrated at least as frequently as listed in Tables 4.6.2a to 4.6.2l.



LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

(8) Off-Gas and Vacuum Pump Isolation - The respective system shall be isolated or the instrument channel shall be considered inoperable and Specification 3.6.1 shall be applied.

(9) Diesel Generator Initiation - The diesel generator shall be considered inoperable and Specification 3.6.3 shall be applied.

(10) Emergency Ventilation Initiation - The emergency ventilation system shall be considered inoperable and Specification 3.4.4 shall be applied.

(11) High Pressure Coolant Injection Initiation - The high pressure coolant injection system shall be considered inoperable and Specification 3.1.8.c shall be applied.

(12) Primary Containment Monitoring - The primary containment monitoring instrumentation shall be considered inoperable and Specification 3.3.8 shall be applied.

b. During operation with a Maximum Total Peaking Factor (MTPF) greater than the design value, either:

(1) The APRM scram and rod block settings shall be reduced to the values given by the equations in Specification 2.1.2.a; or

(2) The power distribution shall be changed such that the MTPF no longer exceeds the design value.



Table 3.6.21

PRIMARY CONTAINMENT MONITORING
Limiting Condition For Operation

<u>Parameter</u>	<u>Minimum No. of Tripped or Operable Trip Systems</u>	<u>Minimum No. of Operable Instrument Channels Per Operable Trip System</u>	<u>Set Point</u>	<u>Reactor Mode Switch Position in Which Function Must Be Operable</u>			
				<u>Shutdown</u>	<u>Refuel</u>	<u>Startup</u>	<u>Run</u>
(1) Drywell-Suppression Chamber Differential Pressure	2	1	Figure 3.3.8			X	X
(2) Suppression Chamber Water Level	2	1	Specification 3.3.2			X	X

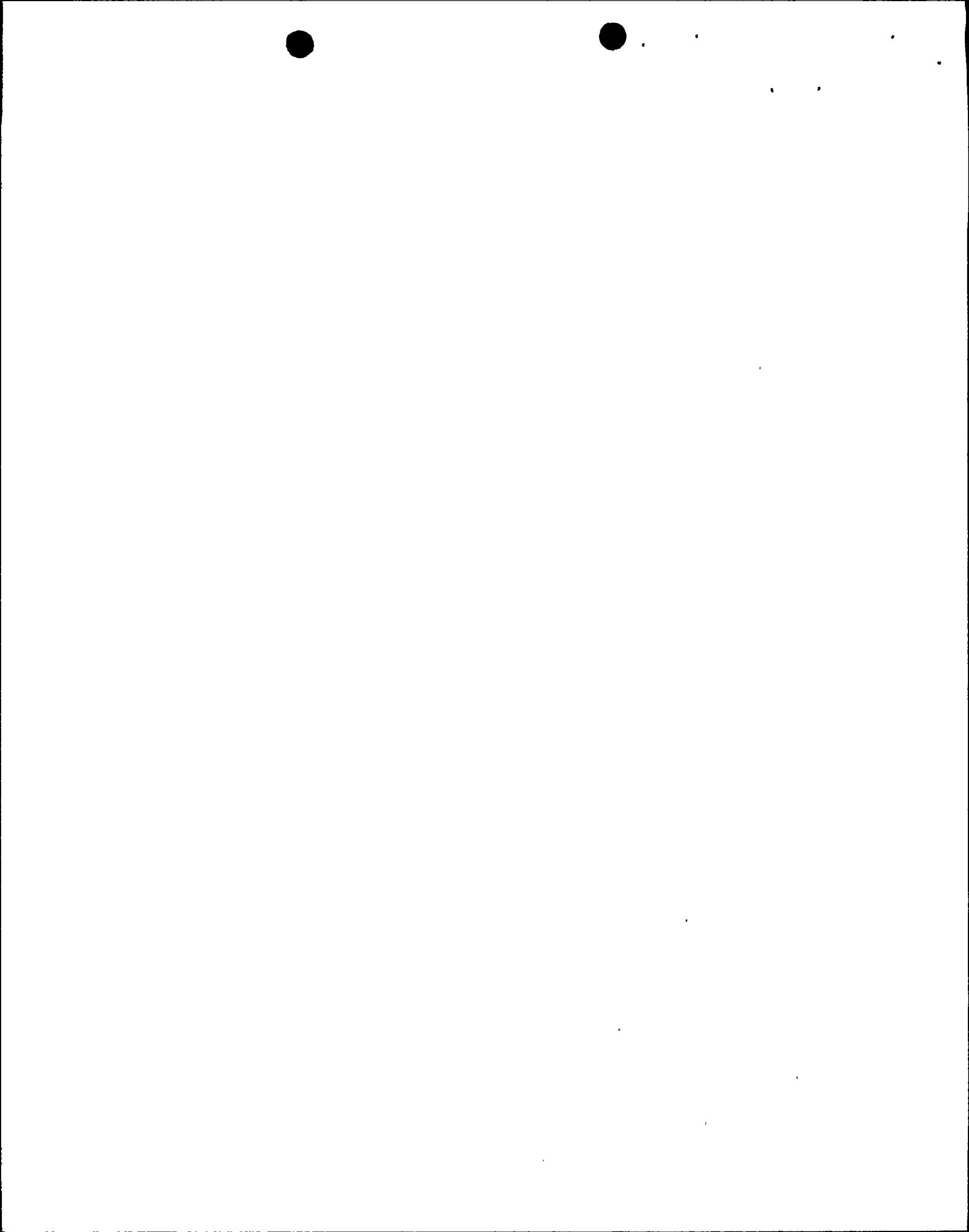


Table 4.6.21

PRIMARY CONTAINMENT MONITORINGSurveillance Requirement

<u>Parameter</u>	<u>Sensor Check</u>	<u>Instrument Channel Test</u>	<u>Instrument Channel Calibration</u>
(1) Drywell-Suppression Chamber Differential Pressure	once/day		Once Per Operating Cycle
(2) Suppression Chamber Water Level	once/day		Once Per Operating Cycle



BASES FOR 3.6.2 AND 4.6.2 PROTECTIVE INSTRUMENTATION

The set points on the generator load rejection and turbine stop valve closure scram trips are set to anticipate and minimize the consequences of turbine trip with failure of the turbine bypass system as described in the bases for Specification 2.1.2. Since the severity of the transients is dependent on the reactor operating power level, bypassing of the scrams below the specified power level is permissible.

The primary containment monitoring system is provided to alert the operator of conditions which could reduce safety margins during a postulated Loss of Coolant Accident. Appropriate operator corrective action is described in Specification 3.3.8, should Limiting Conditions for Operation be exceeded. This monitoring instrumentation does not automatically initiate engineered safeguards systems.

Although the operator will set the setpoints at the values indicated in Tables 3.6.2.a-1, the actual values of the various set points can differ appreciably from the value the operator is attempting to set. The deviations include inherent instrument error, operator setting error and drift of the set point. These errors are compensated for in the transient analyses by conservatism in the controlling parameter assumptions as discussed in the bases for Specification 2.1.2. The deviations associated with the set points for the safety systems used to mitigate accidents have negligible effect on the initiation of these systems. These safety systems have initiation times which are orders of magnitude greater than the difference in time between reaching the nominal set point and the worst set point due to error. The maximum allowable set point deviations are listed below:

Neutron Flux

- APRM, +2.7% of rated neutron flux
- IRM, +2.5% of rated neutron flux

Recirculation Flow, $\pm 1\%$ of rated recirculation flow

Reactor Pressure, ± 15.8 psig

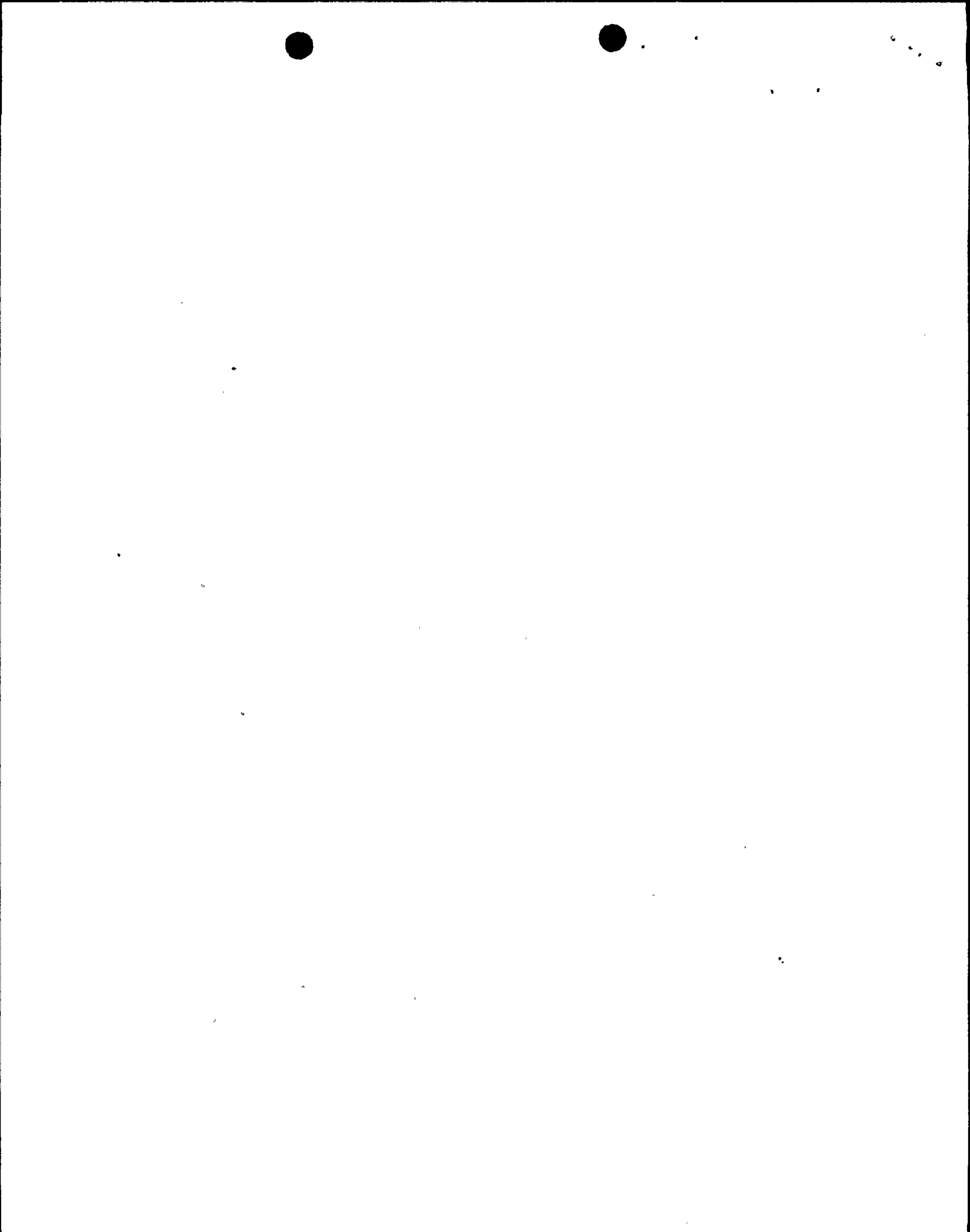
Containment Pressure, ± 0.053 psig

Reactor Water Level, ± 2.6 inches of water

Main Steam Line Isolation Valve Position, $\pm 2.5\%$ of stem position

Scram Discharge Volume, + 0 and - 1 gallon

Condenser Low Vacuum, ± 0.5 inches of mercury



BASES FOR 3.6.2 AND 4.6.2 PROTECTIVE INSTRUMENTATION

High Flow-Main Steam Line, ± 1 psid

High Flow-Emergency Cooling Line, ± 1 psid

High Area Temperature-Main Steam Line, ± 10 F

High Area Temperature-Clean-up and Shutdown, ± 6 F

High Radiation-Main Steam Line, $\pm 100\%$ and -50% of set point value

High Radiation-Emergency Cooling System Vent, $\pm 100\%$ and -50%
of set point

High Radiation-Reactor Building Vent, $\pm 100\%$ and -50% of set point

High Radiation-Refueling Platform, $\pm 100\%$ and -50% of set point

High Radiation-Offgas Line, $\pm 50\%$ of set point, (Appendix D)*

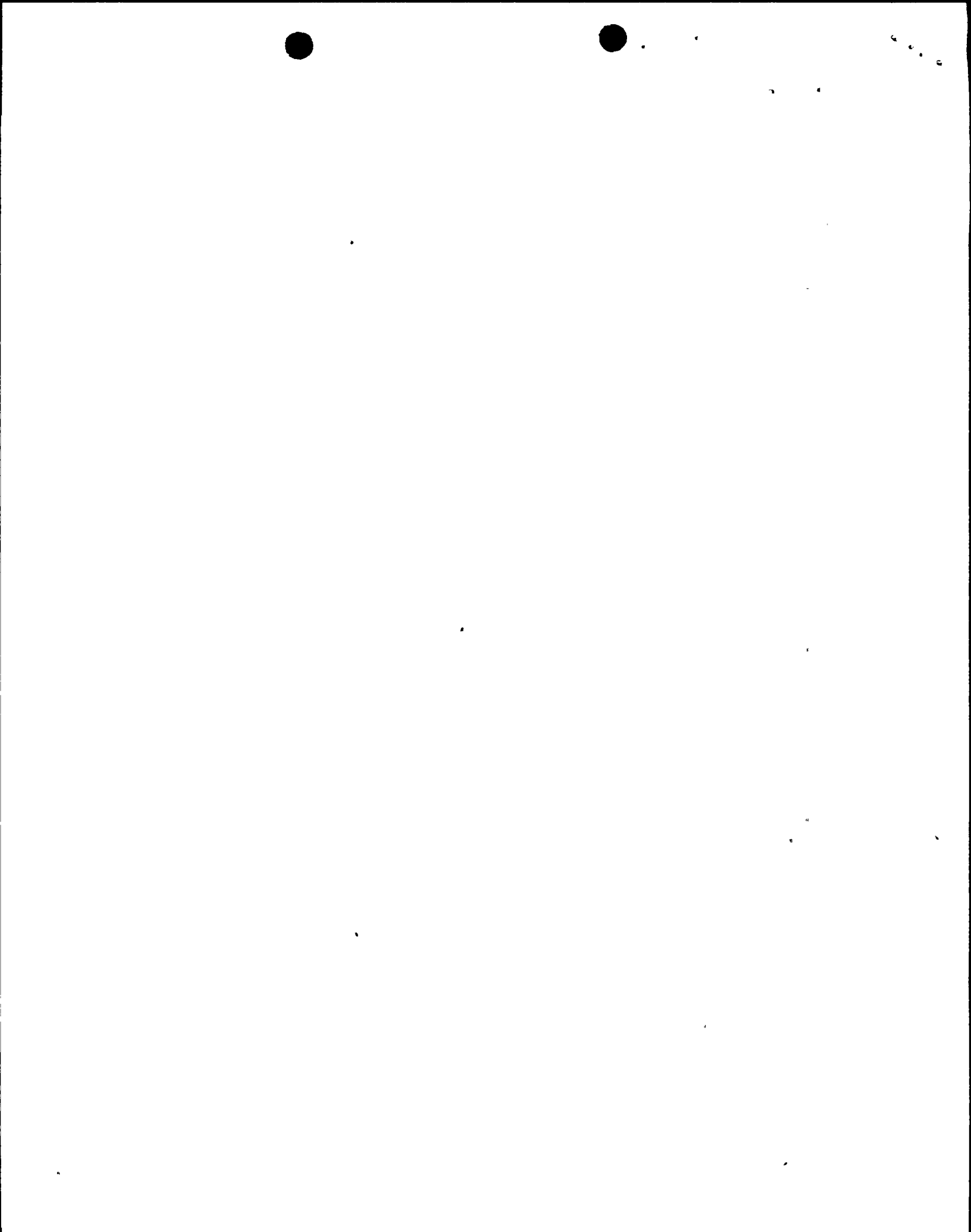
Drywell-Suppression Chamber Differential Pressure, ± 0.1 psid

Suppression Chamber Water Level, ± 4.8 inches

The test intervals for the trip systems result to calculated failure probabilities $< 10^{-4}$ which corresponds to the proposed IEEE Criteria For System Failure Probability. (IEEE SG-3, Information Docket #1 - Protection System Reliability, April 24, 1968).

The test intervals for the trip systems result in calculated failure probabilities ranging from 6.7×10^{-7} to 1.76×10^{-10} (Fifth Supplement, p. 115).* The more frequent sensor checks result in even less probability that the particular system will fail. Because of local high radiation, testing instrumentation in the area of the main steam line isolation valves can only be done during periods of Station shutdown. These functions include high area temperature isolation, high radiation isolation and isolation valve position scram.

Testing of the scram associated with the shutdown position of the mode switch can be done only during periods of Station shutdown since it always involves a scram.



Attachment B

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Supporting Information

A September 30, 1976 letter from the Nuclear Regulatory Commission requested information related to instrumentation which is used to monitor drywell suppression chamber differential pressure and suppression chamber water level. Technical Specifications on these parameters were also requested. On November 5, 1976 we submitted a Technical Specification change on drywell to suppression chamber differential pressure. There presently exists Technical Specifications on suppression chamber water level. Also included in that submittal was a description the instrumentation being used to monitor both differential pressure and water level. A February 4, 1977 letter from the Commission stated that the instrumentation presently installed is unacceptable. We were requested at this time to install instrumentation that would meet the requirements of the staff technical position attached to that letter.

Instrumentation to meet the staff technical position is being installed during the Spring 1977 refueling outage. Since this instrumentation performs a monitoring function only and has no automatic initiation features associated with it, the surveillance requirements set forth in Table 3.6.21 are deemed adequate. In addition, surveillance requirements on this instrumentation are commensurate with surveillance requirements on instrumentation which performs only monitoring functions.



UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)
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NIAGARA MOHAWK POWER CORPORATION) Docket No. 50-220
(Nine Mile Point Nuclear Station)
Unit No. 1))

APPLICATION FOR AMENDMENT

TO

OPERATING LICENSE

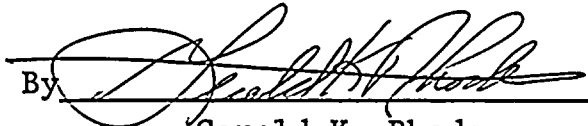
Pursuant to Section 50.90 of the regulations of the Nuclear Regulatory Commission, Niagara Mohawk Power Corporation, holder of Facility Operating License No. DPR-63, hereby requests that Table 3.3.4 of the Technical Specifications and Bases set forth in Appendix A to that License be amended. This proposed change has been concurred with by the Site Operations Review Committee and Safety Review and Audit Board.

The proposed Technical Specification change is set forth in Attachment A to this application. Supporting Information, which demonstrates that the proposed change does not involve a significant hazards consideration, is set forth in Attachment B. The proposed change would not authorize any change in the types or any increase in the amounts of effluents or any change in the authorized power level of the facility.

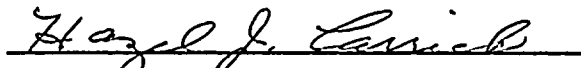


WHEREFORE, Applicant respectfully requests that Appendix A to Facility Operating License No. DPR-63 be amended in the form attached hereto as Attachment A.

NIAGARA MOHAWK POWER CORPORATION

By 
Gerald K. Rhode
Vice President-Engineering

Subscribed and sworn to before me this ~~23rd~~ day of May, 1977.


NOTARY PUBLIC

HAZEL J. CARRICK.
Notary Public in the State of New York
Qualified in Onon. Co. No. 4524460
My Commission Expires March 30, 1978

Attachment A

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Proposed Changes to Facility Operating License

Attached is a revised Page 146 to Appendix A of DPR-63.



LIMITING CONDITION FOR OPERATION

Table 3.3.4

PRIMARY CONTAINMENT ISOLATION VALVES
LINES ENTERING FREE SPACE OF THE CONTAINMENT

<u>Line or System</u>	<u>No. of Valves (Each Line)</u>	<u>Location Relative to Primary Containment</u>	<u>Normal Position</u>	<u>Motive Power</u>	<u>Maximum Oper. Time (Sec)</u>	<u>Action on Initiating Signal</u>	<u>Initiating Signal (All Valves Have Remote Manual Backup)</u>
<u>Drywell Vent & Purge</u>							
<u>N₂ Connection</u> (One Line)	1	Outside	Closed (a)	Air/D.C. Sol.	60	Close	} Reactor water level low-low or drywell high pressure
	1	Outside	Closed (a)	A.C. Motor	60	Close	
<u>Air Connection</u> (One Line)	1	Outside	Closed (a)	Air/D.C. Sol.	60	Close	
	1	Outside	Closed (a)	A.C. Motor	60	Close	
<u>Suppression Chamber Vent & Purge</u>							
<u>N₂ Connection</u> (One Line)	1	Outside	Closed (a)	Air/D.C. Sol.	60	Close	} Reactor water level low-low or drywell high pressure
	1	Outside	Closed (a)	A.C. Motor	60	Close	
<u>Air Connection</u> (One Line)	1	Outside	Closed (a)	Air/D.C. Sol.	60	Close	
	1	Outside	Closed (a)	A.C. Motor	60	Close	
<u>Drywell N₂ Makeup</u> (One Line)	2	Outside	Open	Air/D.C. Sol.	60	Close	Reactor water level low-low or drywell high pressure
<u>Suppression Chamber N₂ Makeup</u> (One Line)	2	Outside	Open	Air/D.C. Sol.	60	Close	Reactor water level low-low or drywell high pressure
<u>Drywell Equipment Drain Line</u> (One Line)	1	Inside	Open	A.C. Motor	60	Close	} Reactor water level low-low or drywell high pressure
	1	Outside	Open	Air/D.C. Sol.	60	Close	
<u>Floor Drain Line</u> (One Line)	1	Inside	Open	A.C. Motor	60	Close	
	1	Outside	Open	Air/D.C. Sol.	60	Close	
<u>Suppression Chamber Water Makeup</u> (One Line)	1	Outside	Closed (b)	A.C. Motor	60	-	Remote manual
	1	Outside	-	Self Act. Ck.	--	-	-
<u>Vacuum Relief Atmosphere to Pressure Suppression System</u> (Three Lines)	1	Outside	Closed	A.C. Motor	5	Open	Negative pressure rel- ative to atmosphere
	1	Outside	-	Self Act. Ck.	--	-	-
<u>Reactor Cleanup System Relief Valve Discharge</u> (One Line to Suppression Chamber)	2	Outside	-	Self Act. Ck.	--	-	-



Attachment B

Niagara Mohawk Power Corporation

License No. DPR-63

Docket No. 50-220

Supporting Information

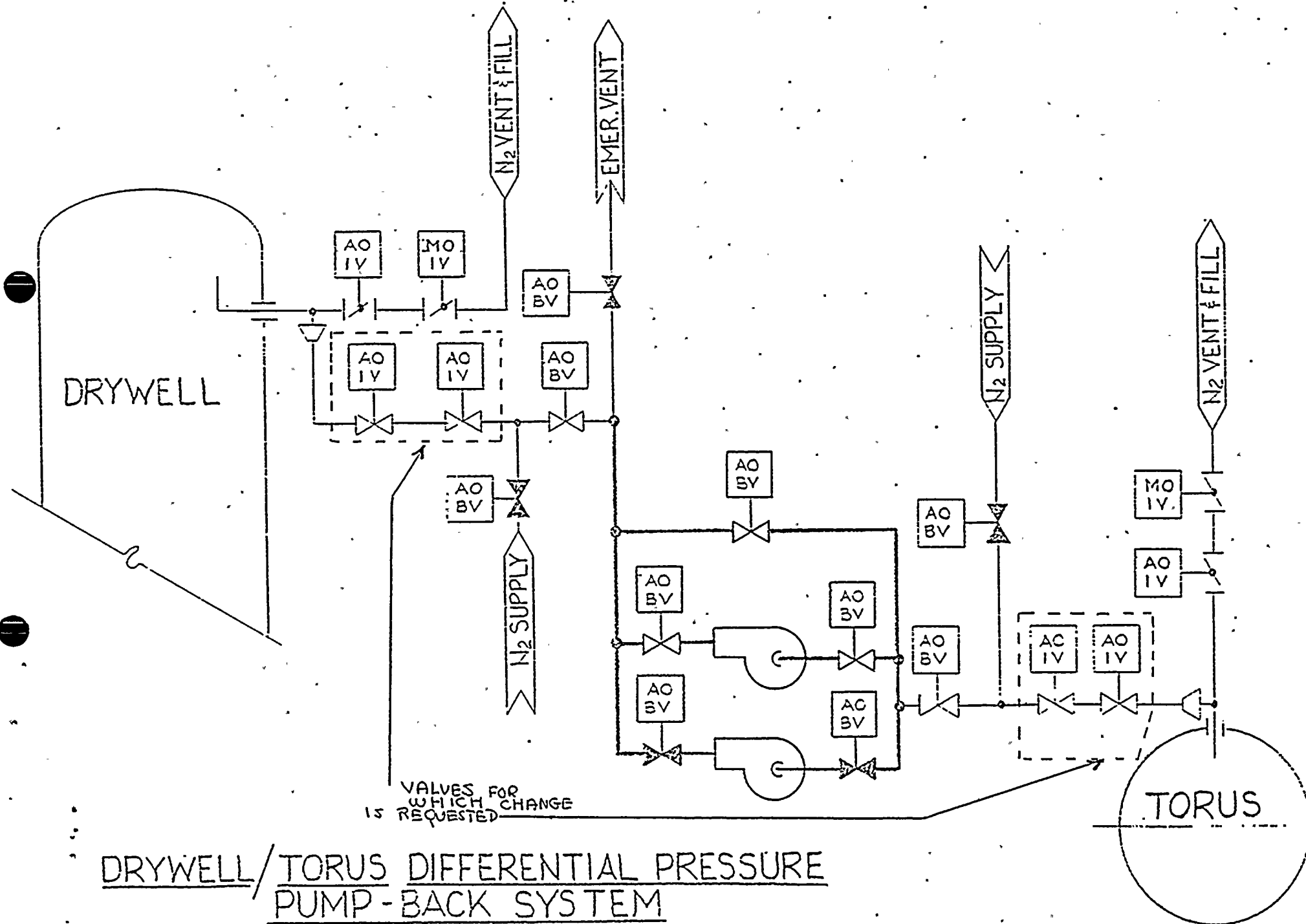
As a result of the Mark I Containment Short-Term Program, it was found that the safety margins associated with the suppression chamber support structures were reduced. This reduction is due to the effects of the downward forces associated with the initial blowdown (an upward force associated with pool swell) following a postulated Loss of Coolant Accident.

In order to restore the safety margins to approximately a factor of two, as required by the Nuclear Regulatory Commission Staff, a differential pressure was established between the drywell and suppression chamber. This differential pressure reduces the water leg in the downcomers which in turn reduces both the upward and downward forces on the suppression chamber support structure.

Presently, differential pressure is being maintained by a feed and bleed method. In order to maintain this differential pressure in a more efficient manor, a pump-back system is being installed at Nine Mile Point Unit 1. Figure 1 shows a sketch for this system. As shown, this system is connected downstream of the isolation valves on the Drywell N₂ Makeup and Suppression Chamber N₂ Makeup lines.

Operation of this system requires that isolation valves on the above lines must be open during operation. However, automatic closure of these valves on low-low reactor water level and high drywell pressure will assure that primary containment integrity is maintained.





DRYWELL/TORUS DIFFERENTIAL PRESSURE PUMP-BACK SYSTEM

FIGURE 1

