

RETURN TO REACTOR DOCKET FILES

Docket No. 50-220

JUNE 11 1979

Mr. Donald P. Dise
 Vice President - Engineering
 Niagara Mohawk Power Corporation
 300 Erie Boulevard West
 Syracuse, New York 13202

Dear Mr. Dise:

The Commission has issued the enclosed Amendment No. ³² to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station Unit No. 1 in response to your application submitted by letter dated May 29, 1979.

The amendment (1) extends the applicability of the safety limit on minimum reactor vessel water level by including all modes of operation and specifically including a low-low-low water level limit, (2) adds a Limiting Safety System Setting on low-low-low water level, and (3) adds a Safety Limit and Limiting Condition for Operation to require that at least two recirculation loops remain open during all modes of operation except (a) when the reactor vessel is flooded to the level of the mainsteam line nozzle, or (b) when there is direct communication between the core and annulus region when steam separators and dryers are removed.

During our review of your application we recommended to members of your staff that a Limiting Safety System Setting on low-low-low water level (item 2 above) be added. Your staff agreed with this recommendation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Original signed by

Thomas A. Ippolito, Chief
 Operating Reactors Branch #3
 Division of Operating Reactors

Copy CC

OELO CONCURRENCE AS TO Amendment AND FR NOTICE ONLY (AS RECD) ORB #3 PPolk:mjf 6/5/79

Enclosures:

*SEE PREVIOUS YELLOW FOR CONCURRENCES

1.	Amendment No. ³² to License No. DPR-63	ORB #3	AD:ESP	OELO	ORB #3	RSB
OFFICE	Safety Evaluation	*Sheppard	Grimes	B.M. G. de Neth.	Ippolito	PCheck
SURNAME	Notice	6/7/79	6/8/79	6/11/79	6/8/79	6/8/79
DATE						

cc w/enclosures:

Docket No. 50-220

Mr. Donald P. Dise
Vice President - Engineering
Niagara Mohawk Power Corporation
300 Erie Boulevard West
Syracuse, New York 13202

Dear Mr. Dise:

The Commission has issued the enclosed Amendment No. to Facility Operating License No. DPR-63 for the Nine Mile Point Nuclear Station Unit No. 1 in response to your application submitted by letter dated May 29, 1979.

The amendment (1) extends the applicability of the safety limit on minimum reactor vessel water level by including all modes of operation and specifically including a low-low-low water level limit, (2) adds a Limiting Safety System Setting on low-low-low water level, and (3) adds a Limiting Condition for Operation to require that at least two recirculation loops remain open during all modes of operation except (a) when the reactor vessel is flooded to the level of the mainsteam line nozzle, or (b) when there is direct communication between the core and annulus region when steam separators and dryers are removed.

During our review of your application we recommended to members of your staff that a Limiting Safety System Setting on low-low-low water level (item 2 above) be added. Your staff agreed with this recommendation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

ORB #3
PPolk:mjf*
6/5/79

*SEE PREVIOUS YELLOW FOR CONCURRENCES

Enclosures:

1.	Amendment No.	to				
OFFICE	License No.	DPR-63	ORB #3	AD:E&P	OELD	ORB #3
BURNAM	Safety Evaluation	Sheppard	Kreutzer	BGrimes		Tippolito
DATE	Notice		6/7/79	6/ /79	6/ /79	6/ /79
	cc w/enclosures					

see next page

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Docket No. 50-220

Mr. Donald P. Dise
 Vice President - Engineering
 Niagara Mohawk Power Corporation
 300 Erie Boulevard West
 Syracuse, New York 13202

Dear Mr. Dise:

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The amendment (1) extends the applicability of the safety limit on minimum reactor vessel water level by including all modes of operation and specifically including a low-low-low water level limit, (2) adds a Limiting Safety System Setting on low-low-low water level, and (3) adds a Limiting Condition for Operation to require that at least two recirculation loops remain open during all modes of operation except when the reactor vessel is flooded to the level of the mainstream line nozzle.

During our review of your application we recommended to members of your staff that a Limiting Safety System Setting on low-low-low water level (item 3 above) be added. Your staff agreed with this recommendation.

Copies of the Safety Evaluation and the Notice of Issuance are also enclosed.

Sincerely,

Thomas A. Ippolito, Chief
 Operating Reactors Branch #3
 Division of Operating Reactors

RSB
Check
6/1/79

Enclosures:
 1. Amendment No. to

OFFICE	2	License No. DPR-63	ORB#3	ORB#3	AD/E&P/DOR	OELD	ORB#3
SURNAME	3	Safety Evaluation	SSheppard	PPolk:acr	BGrimes		Tippolito
DATE		6/7/79	6/5/79	6/ /79	6/ /79	6/ /79	6/ /79

cc w/enclosures
 see next page

Mr. Donald P. Dise

cc: Eugene B. Thomas, Jr., Esquire
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Empire State Plaza
Albany, New York 12223

Mr. Robert P. Jones, Supervisor
Town of Scriba
R. D. #4
Oswego, New York 13126

Niagara Mohawk Power Corporation
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Plant Superintendent
Nine Mile Point Plant
300 Erie Boulevard West
Syracuse, New York 13202

Director, Technical Assessment Division
Office of Radiation Programs (AW-459)
US EPA
Crystal Mall #2
Arlington, Virginia 20460

U. S. Environmental Protection Agency
Region II Office
ATTN: EIS COORDINATOR
26 Federal Plaza
New York, New York 10007

Oswego County Office Building
46 E. Bridge Street
Oswego, New York 13126



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20585

NIAGARA MOHAWK POWER CORPORATION

DOCKET NO. 50-220

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 32
License No. DPR-63

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Niagara Mohawk Power Corporation (the licensee) dated May 29, 1979, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-63 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 32, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Thomas A. Ippolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: June 11, 1979

ATTACHMENT TO LICENSE AMENDMENT NO. 32

FACILITY OPERATING LICENSE NO. DPR-63

DOCKET NO. 50-220

Replace the following pages of the Appendix A Technical Specifications with the enclosed pages. The revised pages are identified by Amendment number and contain vertical lines indicating the area of change.

Remove

6
6a
13
64b
70b

Insert

6
6a
13
64b
70b

SAFETY LIMIT

LIMITING SAFETY SYSTEM SETTING

- c. The neutron flux shall not exceed its scram setting for longer than 1.5 seconds as indicated by the process computer. When the process computer is out of service, a safety limit violation shall be assumed if the neutron flux exceeds the scram setting and control rod scram does not occur.

To ensure that the Safety Limit established in Specifications 2.1.1a and 2.1.1b is not exceeded, each required scram shall be initiated by its expected scram signal. The Safety Limit shall be assumed to be exceeded when scram is accomplished by a means other than the expected scram signal.

- d. During all operating conditions with irradiated fuel in the reactor vessel, the water level shall not be more than 7 feet 11 inches (127.1 inches indicator scale) below minimum normal water level (Elevation 302'9"), except as specified in "e" below.

During all operating conditions with irradiated fuel in the reactor vessel, at least two (2) recirculation loop suction valves and their associated discharge valves will be in the full open position except when the reactor vessel is flooded to a level above the main steam nozzles or when the steam separators and dryers are removed.

For the purpose of performing major maintenance in the shutdown mode only (not to exceed 12 weeks in duration) on the reactor vessel, the reactor water level may be lowered 9' below the minimum normal water level (Elevation 302'9"). Whenever the reactor water level is to be lowered to more than 7 feet 11 inches below minimum normal water level, redundant instrumentation will be provided to monitor the reactor water level.

- d. The reactor water low level scram trip setting shall be no lower than -12 inches (53 inches indicator scale) relative to the minimum normal water level (302'9").
- e. The reactor water low-low level setting for core spray initiation shall be no less than -5 feet (5 inches indicator scale) relative to the minimum normal water level (Elevation 302'9").
- f. The reactor low-low-low level setting shall be no less than 7'11" (127.1 inches indicator scale) below minimum normal water level.
- g. The flow biased APRM rod block trip settings shall be less than or equal to that shown in Figure 2.1.1.

Amendment No. 5, 14, 18, 32

SAFETY LIMIT

Written procedures will be developed and followed whenever the reactor water level is lowered below the low-low level set point. (5 feet below minimum normal water level) The procedures will define the valves that will be used to lower the vessel water level. All other valves that have the potential of lowering the vessel water level will be identified by valve number in the procedures and these valves will be red tagged to preclude their operation during the major maintenance with the water level below the low-low level set point.

In addition to the Facility Staff requirements given in Specification 6.2.2.b, there shall be another control room operator present in the control room with no other duties than to monitor the reactor vessel water level.

BASES FOR 2.1.1 FUEL CLADDING - SAFETY LIMIT

The lowest point at which the water level can normally be monitored is approximately 4 feet 8 inches above the top of the active fuel. This is the low-low-low water level trip point, which is 7 feet 11 inches (127.1 inches indicator scale) below minimum normal water level (Elevation 302'9"). The safety limit has been established here to provide a point which can be monitored and also can provide adequate margin for core heat removal. During periods when the reactor is shut down, consideration must also be given to water level requirements, due to the effect of decay heat. If reactor water level should drop below the top of the active fuel during this time, the ability to cool the core is reduced. This reduction in core cooling capability could lead to elevated cladding temperatures and clad perforation. The core will be cooled sufficiently to prevent clad melting should the water level be reduced to two-thirds of the core height. However, the performing major maintenance as specified in Specification 2.1.1e, redundant instrumentation will be provided for monitoring reactor water level below the low-low-low water level set point. (For example, by installing temporary instrument lines and reference pots to redundant level transmitters, so that the reactor water level may be monitored over the required range.) In addition written procedures, which identify all the valves which have the potential of lowering the water level inadvertently, are established to prevent their operation during the major maintenance which requires the water level to be below the low-low-low level set point. Also a safety limit on the recirculation loop isolation is provided to ensure adequate maintaining water level.

The thermal power transient resulting when a scram is accomplished other than by the expected scram signal (e.g., scram from neutron flux following closure of the main turbine stop valves) does not necessarily cause fuel damage. However, for this specification a safety limit violation will be assumed when a scram is only accomplished by means of a backup feature of the plant design. The concept of not approaching a safety limit provided scram signals are operable is supported by the extensive plant safety analysis.

LIMITING CONDITIONS FOR OPERATION

SURVEILLANCE REQUIREMENT

If at any time during power operation it is determined by normal surveillance that the limiting value for the power/flow relationship is being exceeded, action shall be initiated within 15 minutes to restore operation to within the prescribed limits. If the power/flow relationship is not returned to within the prescribed limits within two (2) hours, reactor power reductions shall be initiated at a rate not less than 10% per hour until the power/flow relationship is within the prescribed limits.

e. Recirculation Loops

During all operating conditions with irradiated fuel in the reactor vessel, at least two (2) recirculation loop suction valves and their associated discharge valves will be in the full open position except when the reactor vessel is flooded to a level above the main steam nozzles or when the steam separators and dryer are removed.

f. Reporting Requirements

If any of the limiting values identified in Specification 3.1.7.a, b, c and d are exceeded, a Reportable Occurrence Report shall be submitted. If the corrective action is taken, as described, a thirty-day written report will meet the requirements of this Specification.

BASES FOR 3.1.7 AND 4.1.7 FUEL RODS

Recirculation Loops

Requiring the suction and discharge for at least two (2) recirculation loops to be full open assures that an adequate flow path exists from the annular region between the pressure vessel wall and the core shroud, to the core region. This provides for communication between those areas thus assuring that reactor water level instrument readings are indicative of the water level in the core region.

When the reactor vessel is flooded to the level of the main steam line nozzle, communication between the core region and annulus exists above the core to ensure that indicative water level monitoring in the core region exists. When the steam separators and dryer are removed, safety limit 2.1.1d and e requires water level to be higher than 9 feet below minimum normal water level (Elevation 302'9"). This level is above the core shroud elevation which would ensure communication between the core region and annulus thus ensuring indicative water level monitoring in the core region. Therefore, maintaining a recirculation loop in the full open position in these two instances are not necessary to ensure indicative water level monitoring.

Reporting Requirements

The LCO's associated with monitoring the fuel rod operating conditions are required to be met at all times, i.e., there is no allowable time in which the plant can knowingly exceed the limiting values of MAPLHGR, LHGR, MCP, or Power/Flow Ratio. It is a requirement, as stated in Specifications 3.1.7a, b, c & d that if at any time during power operation, it is determined that the limiting values for MAPLHGR, LHGR, MCP, or Power/Flow Ratio are exceeded, action is then initiated to restore operation to within the prescribed limits. This action is initiated as soon as normal surveillance indicates that an operating limit has been reached. Each event involving operation beyond a specified limit shall be reported as a Reportable Occurrence. If the specified corrective action described in the LCO's was taken, a thirty-day written report is acceptable.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 32 TO FACILITY OPERATING LICENSE NO. DPR-63

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT NUCLEAR STATION, UNIT NO. 1

DOCKET NO. 50-220

INTRODUCTION

By letter dated May 29, 1979 the Niagara Mohawk Power Corporation (licensee) requested an amendment to the Technical Specifications appended to Operating License No. DPR-63 for the Nine Mile Point Nuclear Station, Unit No. 1. The proposed amendment would (1) extend the applicability of the safety limit on minimum reactor vessel water level by including all modes of operation and specifically including a low-low-low water level limit which presently is the lowest point at which level in the reactor vessel can be monitored, and (2) add a Safety Limit and Limiting Condition for Operation (LCO) to require that at least two recirculation loops remain open during all modes of operation except when the reactor vessel is flooded to the level of the main steam line nozzle. This LCO assures hydraulic communication between the reactor core region and the annulus thereby ensuring indicative water level monitoring in the core region.

BACKGROUND INFORMATION

The licensee's request was initiated as a result of his review of a loss-of-feedwater transient that was experienced at the Oyster Creek Nuclear Power Plant.¹

On May 2, 1979, during the performance of the isolation condenser automatic actuation surveillance test, a false reactor high pressure scram occurred at the Oyster Creek Nuclear Generating Station. Subsequently, a turbine trip occurred on low load. This initiated an automatic transfer of power to the startup transformers. Startup transformer SA provides the power for the A feedwater train, and startup transformer SB provides power for the B & C feedwater and condensate pumps. However, SB was out of service for maintenance. When the main turbine generator tripped, power to the B & C feedwater pumps was lost. The A feedwater pump tripped because of the hydraulic transient caused by the loss of the B & C condensate. Therefore, a loss-of-feedwater transient occurred.

During the loss-of-feedwater transient all five of the recirculation loop pump discharge valves were closed and all of the two inch bypass lines were open. These

¹The staff's review and evaluation of this transient and required corrective actions is appended to letter NRC (Eisenhut), to JCP&L (Finfrock), Docket No. 50-219, dated May 30, 1979, and Safety Evaluation Supporting Amendment No. 36 to DPR-16, dated May 30, 1979.

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five bypass lines did not allow a large enough flow of water from the outside of the core region, the annulus, to the core region. As a result, the water was boiling away in the core region faster than it was being returned through the bypass lines and the water level above the core decreased below the low-low-low level alarm. When one of the recirculation loop pump discharge valves was reopened, the water flow from the annulus to the core region compensated for the water boil off in the core region increasing the water level above the low-low-low level alarm.

EVALUATION

As a result of the analysis of the May 2, 1979 event at Oyster Creek it was recognized by the licensee of the Nine Mile Point Facility that the low-low-low water level safety limit should be applied to all modes of operation when the reactor vessel contains fuel. The basis for the current Technical Specifications limit was to assure adequate margin for removing decay heat from the fuel during periods when the reactor is shutdown and corresponds to the lowest reactor vessel water level that can be monitored. The basis for the new safety limit during operation is to assure adequate margin for core heat removal during anticipated transients. It is necessary to have a measurable water level limit for the safety limit for all modes of operation. Therefore, the licensee requested that the Technical Specifications be modified to make the low-low-low water level (7 feet 11 inches below minimum normal water level) a safety limit applicable to all modes of operation. During staff review of the licensee's request, we recommended that a limiting safety system setting on low-low-low water level be included also. This was discussed with the licensee and he agreed. These changes more clearly define the safety limit and limiting safety system settings for reactor vessel water level for all modes of operation; the low-low-low water level limit is not changed; therefore, the proposed change as modified by the staff is acceptable.

The licensee also proposed to add a LCO to require that during all modes of operation except when the reactor is flooded to a level above the mainsteam nozzles or when steam separators and dryers are removed at least two (2) recirculation loop suction valves and their associated discharge valves will be in the full open position. This will assure that at all appropriate times the water in the core and in the annulus will be in hydraulic communication to preclude occurrence of an event similar to the May 2, 1979 event at Oyster Creek resulting from different levels between these regions. In order to provide appropriate action in the event that such a valve configuration is not maintained, we have also made the proposed condition a safety limit.

The event at Oyster Creek resulted in a substantial decrease in core water level because of partial isolation of all recirculation lines during the transient. The major concern is that the reactor core can be effectively isolated from its source of coolant in the annulus region. We have reviewed analysis of natural circulation through loops similar to those at Nine Mile Point (reference 1) and have also evaluated the specific Nine Mile Point forced circulation loop and reactor vessel intervals configurations. Based on our evaluation we have concluded that the proposed Technical Specification will assure adequate communication between the annulus and the core during all modes of operation including transients, and therefore, is acceptable.

¹ibid, page 1

ENVIRONMENTAL CONSIDERATIONS

We have determined that the amendment does not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that the amendment involves an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with the issuance of this amendment.

CONCLUSION

We have concluded, based on the considerations discussed above, that: (1) because this amendment does not involve a significant increase in the probability or consequences of accidents previously considered and does not involve a significant decrease in a safety margin, the amendment does not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Dated: June 11, 1979

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKET NO. 50-220

NIAGARA MOHAWK POWER CORPORATION

NOTICE OF ISSUANCE OF AMENDMENT TO FACILITY
OPERATING LICENSE

The U. S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 32 to Facility Operating License No. DPR-63 to Niagara Mohawk Power Corporation (the licensee) which revised the Technical Specifications for operation of the Nine Mile Point Nuclear Station, Unit No. 1 (the facility) located in Oswego County, New York. The amendment is effective as of its date of issuance.

The amendment (1) extends the applicability of the safety limit on minimum reactor vessel water level by including all modes of operation and specifically including a low-low-low water level limit, (2) adds a Limiting Safety System Setting on low-low-low water level, and (3) adds a Safety Limit and Limiting Condition for Operation to require that at least two recirculation loops remain open during all modes of operation except when the reactor vessel is flooded to the level of the mainsteam line nozzle.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I which are set forth in the license amendment. Prior public notice of this amendment was not required since the amendment does not involve a significant hazards consideration.

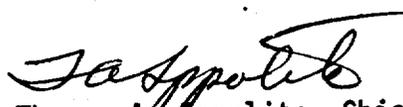
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The Commission has determined that the issuance of this amendment will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement or negative declaration and environmental impact appraisal need not be prepared in connection with issuance of this amendment.

For further details with respect to this action, see (1) the application for amendment dated May 29, 1979, (2) Amendment No. 32 to License No. DPR-63, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N. W., Washington, D. C. and at the Oswego County Office Building, 46 E. Bridge Street, Oswego, New York 13126. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland this 11th day of June 1979.

FOR THE NUCLEAR REGULATORY COMMISSION


Thomas A. Appolito, Chief
Operating Reactors Branch #3
Division of Operating Reactors