



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 79 TO FACILITY OPERATING LICENSE DPR-63

NIAGARA MOHAWK POWER CORPORATION

NINE MILE POINT UNIT 1

DOCKET NO. 50-220

1.0 INTRODUCTION

By application dated January 15, 1986, as clarified February 28, and as supplemented March 3, 1986, Niagara Mohawk Power Corporation (the licensee) requested an amendment to the Technical Specifications for Facility Operating License No. DPR-63 for Nine Mile Point Nuclear Station, Unit No. 1. The amendment would add notes for Tables 3.6.2a, 4.6.2a, 3.6.2d, and 4.6.2d which would allow one reactor water level instrument channel in each trip system to be bypassed in the cold shutdown and refuel conditions during the Spring 1986 refueling outage to modify the emergency condenser piping.

2.0 EVALUATION

During this refueling outage, the licensee intends to replace the emergency condenser piping from the reactor vessel to the isolation valves. However, the instrument line for Yarway water level column No. 12 (for reactor water level measurement) passes directly over the top of the piping for emergency condenser loop No. 11. In order to replace this section of the piping for emergency condenser loop No. 11, it requires cutting and capping the instrument line.

The reactor water level instrument channels are required to be operational in the shutdown and refuel modes of operation under the current Technical Specification requirements. The low-low reactor water level signals initiate the core spray system while the low reactor water level signals initiate reactor scram.

The logic to initiate the core spray function is based on low-low reactor water level or high drywell pressure. During the refuel mode of operation, only the low-low reactor water level signals could initiate the actuation logic. There are four level instrument channels relating to the core spray actuation logic, two channels per trip system. The signals are used in a one-out-of-two taken twice logic for starting core spray pumps. Temporary cutting and capping of the instrument line will affect two instrument channels, one in each trip system. The licensee proposed that one instrument channel in each trip system may be bypassed in the cold shutdown and refuel conditions during this refueling outage. The core spray automatic actuation logic on low-low reactor water level will be changed from a one-out-of-two taken twice to a one-out-of-one taken twice. Technical Specification Table 3.6.2d and notes for Tables 3.6.2d and 4.6.2d will indicate this one time exception.

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The reactor water level signals are an input to the scram logic. The capability to scram is required even in the refuel mode of operation because an individual control rod may be withdrawn one at a time in the refuel condition. The licensee proposed that one instrument channel in each trip system may be bypassed in the cold shutdown and refuel conditions during the refueling outage.

The scram initiation logic on low reactor water level will be changed from a one-out-of-two taken twice to a one-out-of-one taken twice. Technical Specification table 3.6.2a and notes for tables 3.6.2a and 4.6.2a will indicate this one time exception.

During the outage the reactor core will be off-loaded to the spent fuel pool. Decay heat removal will be accomplished by the spent fuel pool cooling system. The majority of time the reactor water level instruments are bypassed will be with the plant in this configuration. During periods of core off-loading and reloading, the reactor coolant is at or near ambient temperature. The reactor cavity is filled with refueling water. The water level is much higher than the level during other modes of operation.

There are several annunciators at the control room panel and at the computer console to alert the operator on reactor water level. The core spray pumps and a scram can be manually initiated by the operator from the control room.

The staff has reviewed the above information which is based on the licensee's submittal dated January 15, 1986 and a subsequent telephone conference held on February 28, 1986. The staff finds that the licensee's request for one time exception from this technical specification is acceptable. The decision is based on the following:

1. The water level in the reactor cavity during the refuel mode is much higher than during other modes of operation. The needs for core spray action or a scram due to low reactor water level is very unlikely.
2. During this refueling outage, the decay heat in the reactor will be low because the majority of time the fuel is off-loaded to the spent fuel pool.

In addition this one time exception will be contingent upon the control room operators receiving special instructions with regard to their role in monitoring reactor vessel water level and taking appropriate manual actions required in response to vessel level changes.

3.0 EMERGENCY CIRCUMSTANCES

The licensee will shut down Nine Mile Point 1 on March 8, 1986 to begin the Cycle 9 refueling outage. On February 4, 1986 the licensee informed the staff by telephone conversation of the need for issuance of the amendment by March 14, 1986. The staff noticed receipt of the application in the Federal Register on February 17, 1986 (51 FR 5285) and provided a 30 day opportunity for comment and for hearing requests. In subsequent conversations and submittal dated March 3, 1986, the licensee informed the staff of the need to issue the amendment on March 8, 1986 in order to avoid a delay in the scheduled restart from Cycle 9. The date of March 14, 1986, was based on the



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licensee's intent to freeze the instrument line in order to cut and cap it to facilitate replacement of the emergency condenser piping. But because the interface between the instrument line and the emergency cooling system piping is within approximately 10 feet of where the line connects to the reactor vessel, there is insufficient space to freeze the instrument line in order to cut and cap it as originally intended. Therefore, if the technical specification change is not approved at the beginning of the refueling outage, March 8, 1986, so that the instrument line can be cut at this time, it will be necessary to discontinue refueling activities until it is approved, making the refueling floor activities a critical path and thus extending the outage.

The staff has reviewed the circumstances associated with the licensee's request and agrees that the station could not begin needed modifications at the beginning of the outage, thereby extending the refueling outage. The requested amendment is, therefore, needed to avoid a delay in the scheduled restart of Nine Mile Point 1 and thus constitutes a valid emergency situation. The staff has also concluded that the licensee has provided a sufficient basis for finding that the emergency situation could not have been avoided by prior application. Therefore, in accordance with 10 CFR 50.91(a)(5), a valid emergency existed.

3.1 No Significant Hazards Consideration Determination

The Commission's regulations in 10 CFR 50.92 provide that the Commission may make a final determination that a license amendment involves no significant hazards considerations if operation of the facility in accordance with the amendment would not:

- (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) Involve a significant reduction in a margin of safety.

The information in Section 2.0 above provides the basis for evaluating this license amendment against these criteria. Since the requested operational mode is acceptable and the plant operating conditions, the physical status of the plant, and dose consequences of potential accidents are the same as without the requested change, the staff concludes that:

- (1) The proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated. The proposed technical specification amendment would authorize bypassing of selected reactor water level instrumentation in order to cut and cap their associated water level column. The cutting and capping of the water level column is necessary in order to facilitate replacement of Emergency Condenser Steam Supply line piping. Due to the close proximity of the water column to the emergency condenser steam supply



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line piping, the replacement piping modification would be more difficult to achieve without cutting and capping the water level transmitter line. Cutting and capping of the water level column will result in loss of several of the reactor water level signals used to initiate reactor scrams and core spray operation. These water level signals are currently required to be available in the refueling mode for reactor scram and core spray function and in the shutdown mode for core spray initiation. Normally two water columns are in service with water level transmitters from each trip system connected to it. Four low-reactor water level instrument channels for reactor scram and four low-low reactor water level instrument channels for core spray initiation are normally available. The instrument channels are arranged such that the initiating logic is one-out-of-two taken twice. Removal of the two water columns will result in a reduction of the initiating logic to one-out-of-one taken twice for each of the parameters being monitored. Automatic initiation of reactor scram and core spray operation would still be available from the remaining water column and associated instrument channels.

In addition manual initial of reactor scram and/or core spray operation would also be available to the control room operator. Reactor water level indication is available in the control room to alert the operator of any abnormal reactor water level situation in order to initiate corrective action.

Since reactor scram and core spray operation can be automatically initiated by the redundant water level column and associated instrument channels or manually initiated by the control room operator in the event of decreased water level in the reactor vessel, the proposed amendment will not increase the probability or consequences of an accident previously evaluated.

- (2) The proposed amendment in accordance with the operation of Nine Mile Point Unit 1 will not increase the possibility of a new or different kind of accident from any accident previously evaluated. The proposed amendment will allow taking one of the Yarway water level columns out of service by cutting and capping the instrument line. Therefore, the proposal will not create the possibility of a new or different kind of accident from any accident previously evaluated.
- (3) The proposed amendment in accordance with the operation of Nine Mile Point Unit 1 will not involve a significant reduction in the margin of safety. While there is some reduction in the margin of safety as the tripping logic for the initiation of core spray is being reduced from a one-out-of-two taken twice to a one-out-of-one taken twice, it is not considered to be a significant reduction in the margin of safety. This will occur only during cold shutdown/refuel conditions when the reactor coolant is at or near ambient temperature. Therefore, the



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probability of both operable water level transmitters not accurately indicating a water level drop is extremely unlikely (i.e., there will not be any sensing line flashing due to high pressure and temperature). In addition, the core spray pumps and a scram can be manually initiated from the control room. Therefore, the proposed amendment will not involve a significant reduction in a margin of safety.

As determined by the analysis above, this proposed amendment involves no significant hazards considerations.

3.2 State Consultation

Consultation was held with the State of New York by telephone on March 4, 1986. The State expressed no concern either from the standpoint of safety or of no significant hazards consideration determination, in view of the interim nature of the amendment and the compensatory measures.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The 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 this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this 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 nor environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above that: (1) the amendment does not (a) significantly increase the probability or consequences of an accident previously evaluated, (b) increase the possibility of a new or different kind of accident from any previously evaluated or (c) significantly reduce a safety margin and, therefore, the amendment does not involve 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 the amendment will not be inimical to the common defense and the security or to the health and safety of the public.

Principal Contributor: H. Li, J. Kelly.

Dated: March 7, 1986.



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