



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 20 TO FACILITY OPERATING LICENSE

NOS. NPF-37 AND NPF-66

COMMONWEALTH EDISON COMPANY

BYRON STATION, UNITS 1 AND 2

DOCKET NOS. 50-454 AND 50-455

1.0 INTRODUCTION

By letter dated June 22, 1988, Commonwealth Edison Company (CECo), the licensee, submitted a proposed amendment to Facility Operating License Nos. NPF-37 and NPF-66 for Byron Station, Units 1 and 2. The proposed amendment request changes to the Technical Specifications to exempt the action statement in Technical Specification (TS) 3.7.5.e(2) from the provisions of TS 3.0.4. By letter dated July 14, 1988, the licensee requested that this amendment be processed on an emergency basis to allow Unit 2, which had tripped, to return to Mode 1. By letter dated July 15, 1988, the staff issued a Temporary Waiver of Compliance to allow the unit to return to Mode 1, but requested additional technical information. The licensee provided the additional information by letter dated July 18, 1988.

2.0 DISCUSSION AND EVALUATION

The ultimate heat sink for Byron Station is the two cooling tower basins. Assuming a loss-of-coolant accident in one unit and an orderly shutdown of the other unit, the available water in the basins would last about one day. To satisfy the design basis requirement of cooling capability for 30 days, two redundant makeup systems are provided: two onsite deep wells and the Rock River. The limiting condition for operation (LCO) in Technical Specification 3.7.5.e requires that Rock River water level be at or above 670.6 feet mean Sea Level. If the water level goes below 670.6 feet, and the river flow is greater than 700 cfs, the action statement in 3.7.5.e.(2) requires that river flow be verified every 12 hours or until the river water level exceed 670.6.

Technical Specification 3.0.4 prohibits entry into an operational mode unless the conditions for the LCO are met without relying on the provisions in the action statements. The proposed amendment would revise action statement 3.7.5.e.(2) to state that the provisions of 3.0.4 do not apply.

Generic letter 87-09, issued May 4, 1987, identifies several potential improvements to the Technical Specifications for all plants and encouraged licensees to propose changes to their Technical Specifications to incorporate these improvements. One suggested improvement dealt with the applicability of 3.0.4. The generic letter states "For an LCO that has Action Requirements permitting

continued operation for an unlimited period of time, entry into an operation mode or other specified condition of operation should be permitted in accordance with the Action Requirements." Action requirement 3.7.5.e(2) does permit continued operation for an unlimited period of time, provided that river flow is verified every 12 hours. Thus, the proposed amendment is consistent with Generic Letter 87-09.

By letter dated July 18, 1988, the licensee provided additional technical justification for the proposed amendment. The 670.6 foot Rock River level in the Technical Specifications is the level at which sufficient river flow is available such that the Oregon dam could fail and river level would remain above 664 feet. This ensures adequate net positive suction head (NPSH) for the essential service water makeup pumps. Above 670.6 feet river flow does not need to be verified. Below 670.6 feet, level is not an accurate indication of an adequate water source for the essential service water makeup pumps, so flow must be measured. The licensee's analysis of the Rock River has determined that a minimum flow of 700 cfs is required to maintain an adequate NPSH for the essential service water makeup pumps. This flow corresponds to a river level of 664.7. Thus, the 670.6 feet level is essentially an alarm setpoint that requires verifying the river flow on a 12-hour cycle. The actual allowed minimum river level is 664.7. The staff had reviewed and approved these levels prior to licensing of Byron Station, Unit 1.

Since the proposed amendment complies with Generic Letter 87-09, and there is a technical basis for allowing operation below a river level of 670.6 feet, the staff finds the amendment acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

These amendments involve a change in the installation or use of the facilities components located within the restricted areas as defined in 10 CFR 20. The staff has determined that these amendments involve 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 now made a final no significant hazards finding with respect to these amendments. Accordingly, these amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR Sec 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of these amendments.

4.0 FINDINGS OF EMERGENCY WARRANTING AN AMENDMENT WITHOUT NOTICE

The proposed amendments are to revise a Technical Specification ACTION Statement concerning the ultimate heat sink. The particular ACTION Statement in Technical Specification 3/4.7.5 involves the Rock River water level and flow. The Rock River is one of two makeup sources for the ultimate heat sink at Byron Station. The ongoing drought in the mid-western part of the country has caused the level in the river to drop below the limit specified in the Limiting Condition for Operation of the ultimate heat sink technical specification. That limit is 670.6 feet mean sea level (MSL). As a result, Byron Station has entered the ACTION Statement requirement 3.7.5.e. The action requirement

permits reactor operation to continue for an unlimited period of time as long as river flow remains greater than 700 cubic feet per second (cfs) and river level remains above 664.7 feet MSL. River flow must be verified every 12 hours under these conditions until level exceeds 670.6 feet MSL.

General Technical Specification 3.0.4 applies to Technical Specification 3.7.5. According to Specification 3.0.4, entry into an operational mode or other specified condition cannot be made unless the conditions of the limiting condition for operation are met without reliance on the provisions contained in the ACTION requirements. As a result of the scram on Unit 2, the unit cannot be restarted because the LCO would not be satisfied without reliance on an action requirement, even though the action requirement would permit continued operation.

The licensee's application for the Technical Specification change has been timely. The licensee had submitted this request for a standard amendment to the Technical Specifications on June 22, 1988 in anticipation of continued low water level and flow conditions of the Rock River. Also, the need for power in that region of the country (Commonwealth Edison's service territory) is heightened because several other units are down in addition to Byron 2 and Zion 1, and Dresden, Quad Cities and LaSalle are derated due to river and lake temperature limitations. As a result, Byron Unit 2 is needed to provide power to the service territory and needs to be returned to power as soon as possible.

On Thursday, July 14, 1988, at approximately 1:14 a.m., Byron Unit 2 experienced an unexpected shutdown due to the inadvertent opening of the two feeder breakers that connect the Unit Aux and System Transformers to the Unit 2 non-safety related bus. The unit was in Mode 3 and could not mode changes to come back up in power because of the ACTION Statement in Technical Specification 3/4.7.5. Subsequently, the licensee supplemented its June 22, 1988 letter requesting an Emergency License Amendment.

The staff finds that failure to grant the proposed change in a timely manner would create an undue hardship in light of the conditions in that region of the nation. Additionally, the staff finds that the licensee could not reasonably have avoided this situation, that the licensee has responded in a timely manner, and has not delayed its application to take advantage of the Emergency License Amendments provision of 10 CFR 50.91. Accordingly, the staff includes that the licensee has satisfied the requirements of 10 CFR 50.91(a)(5), and that a valid emergency exists.

5.0 FINAL NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Commonwealth Edison Company (the licensee) has completed, as part of their review, an evaluation and determination that the proposed amendment involves no significant hazards conditions. According to 10 CFR 50.92(c), a proposed amendment to an operating license involves no significant hazards considerations if operation of the facility in accordance with the proposed 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.

This proposed amendment request for Byron Units 1 and 2 revises the Technical Specification ACTION requirement concerning the Rock River water level and flow. The ACTION requirement is being revised to state that the provision of Technical Specification 3.0.4 are not applicable. This will have the effect of permitting changes in Operational Modes while relying on the ACTION requirements.

The licensee has addressed the three criteria, stated above, in connection with this proposed amendment and has presented the following evaluation:

- (1) Water level and flow in the Rock River have no effect on the probability of previously evaluated accidents. Therefore, the probability of previously evaluated accidents will not be increased.

The affected ACTION requirement permits reactor operation to continue as long as river flow and level stay above minimum requirements. The minimum flow and level limits that assure adequate suction for the essential service water makeup pumps are not being changed by this amendment. As a result, the consequences of previously evaluated accidents will not be increased.

- (2) This proposed amendment does not allow any new mode of operation beyond what is already permitted by the action requirement. In addition, this amendment does not allow any modification to the plan. Therefore, operation of the facility in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.
- (3) Since the technical specification minimum flow and level limits for the Rock River are not being changed, this amendment does not involve a significant reduction in a margin of safety.

The staff has confirmed the basis of the no significant hazards findings described in the notice published in the Federal Register on July 8, 1988 (53 FR 25710). Additionally, the staff, in reviewing the licensee's request for the above amendment, determined that should this request be implemented, it would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated, does not create the possibility of an accident of a type different from any evaluated previously, and does not involve a significant reduction in a margin of safety; the amendment does not involve a significant hazards conditions, (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 the health and safety of the public.

The State of Illinois was informed by telephone on July 18, 1988, of the staff's no significant hazards consideration determination. The State contact had no comments on the determination.

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Dated: July 21, 1988