



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 183 TO FACILITY OPERATING LICENSE NO. DPR-49

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

DUANE ARNOLD ENERGY CENTER

DOCKET NO. 50-331

1.0 INTRODUCTION

By letter dated December 30, 1991, Iowa Electric Light and Power Company (the licensee) proposed changes to the Technical Specifications (TS) for the Duane Arnold Energy Center. The proposed changes combine the Recirculation Pump Limiting Condition for Operation (LCO) and Surveillance Requirements into one section, consolidate Single Loop Operation (SLO) requirements from other sections, modify the Power to Flow limit figure for clarity, and make minor editorial changes and corrections.

2.0 EVALUATION

Single Loop Operation (SLO), which allows continued electrical production during periods when one recirculation pump is not available due to component malfunction or maintenance, has been permitted at the Duane Arnold Energy Center (DAEC) since 1985, when Facility Operating License Amendment No. 119 was incorporated into the DAEC TS. Amendment No. 119 included guidance and recommendations from General Electric regarding the possibility of thermal-hydraulic instabilities that could occur under certain conditions. Although SLO has been conducted several times since 1985 with no indication of instability, due to the complex nature of the TS dealing with SLO, administrative concerns have been voiced regarding the complexity of the TS sections that contain the SLO requirements. As a result, the proposed revision was submitted to make changes to improve organization and clarity and apply human-factors concepts.

Most of the proposed revision deals with combining the Recirculation Pump Limiting Conditions for Operation (LCOs) and Surveillance Requirements (SRs) for both two loop and single loop operation (SLO) into one section. To implement these modifications, editorial changes to the Recirculation Pump LCO and Surveillance Requirements for both two loop and SLO were made by combining Sections 3.3.E/4.3.E and 3.6.F/4.6.F of the TS into Section 3.3.F/4.3.F. The new Section was rewritten, reformatted, and reorganized to improve clarity. The editorial changes involved separating LCOs and SRs that were combined, rearranging sections into a more logical sequence, and relocating requirements from other TS sections to consolidate SLO requirements into one location.

In addition, an LCO was added to address inadvertent entry into Region 1 of Figure 3.3-1 (greater than the 80% load line and less than 39% rated core flow.) The action statement is consistent with current operating practice in avoiding areas where the increased likelihood of thermal-hydraulic instability could exist. This action, however, was not specifically stated in the TS previously.

Editorial references to minimum critical power ratio (MCPR) adjustments and flow biased average power range monitor (APRM) setpoint adjustment when in SLO were added to Section 3.3. A note was also added to provide requirements for starting of the recirculation pump motor generator set and recirculation pump under administrative control for testing purposes. These requirements are already required by other TS sections, but were added to consolidate SLO requirements.

Figure 3.3-1, the graph of Thermal Power vs Core Flow Limits for Thermal Hydraulic Stability, was redrawn for clarity and incorporates the requirements of the figure and the text as they presently appear in the TS. The new figure will more closely resemble those used during plant operation, and more clearly define the various regions of concern for LCOs and SRs.

In another editorial change, the paragraph in Section 3.12 referencing the Operating Limit MCPR adjustment for SLO was deleted, since it is redundant to a previous section which references the Core Operating Limits Report for MCPR limits.

The appropriate bases information was reworded, reorganized, or deleted on the above changes.

The sections of the proposed revision that contain additional guidance not specifically provided previously in TS are consistent with current operating practices and do not remove or lessen any existing TS requirements. Overall, the proposed revision will improve the operators' awareness and understanding of SLO and improve their ability to operate the plant safely. The staff has reviewed the proposed changes and has concluded that the changes are editorial in nature, do not affect the technical content of the TS, and are therefore acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Iowa State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATIONS

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 or a change to a surveillance requirement. 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 (57 FR 4489). 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 or 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) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: June 24, 1992