



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 124 TO 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 a letter dated June 14, 1985, the Iowa Electric Light and Power Company (the licensee) requested that the effective date of the Duane Arnold Energy Center (DAEC) Amendment No. 121 be revised from May 28, 1985 to July 31, 1985.

By a letter dated January 11, 1985, the Iowa Electric Light and Power Company requested revision of the DAEC Technical Specifications to incorporate revised reactor vessel pressure-temperature operating limits. The proposed limits accounted for minor estimated changes in fracture toughness due to neutron fluence on the vessel during the first six effective full power years (EFPY) of operation and were intended to cover operation during the second such six EFPY. In retrospect, it would have been appropriate to request that the amendment be made effective upon restart of the plant. The licensee stated that it anticipated that restart would occur in May and that NRC review of the requested Technical Specification changes would not be completed until early July--i.e., six months after the submittal.

At the time of the licensee's January 11, 1985 submittal, the DAEC Cycle 7/8 refueling outage was scheduled to begin on February 1, 1985, and be completed by May 20, 1985. During the outage, the licensee was required to perform the 10-year hydrostatic test of the reactor vessel and that test was scheduled to be done after the fuel had been loaded (approximately May 6).

The outage began on schedule but, during the outage, pipe cracks were discovered. The associated repair work and other unanticipated problems have extended the outage. The licensee now expects to restart the plant on July 3, 1985, some six weeks later than was scheduled in January 1985. Meanwhile, the NRC completed its review of the requested amendment incorporating revised pressure-temperature operating limits earlier than expected by the licensee and issued the amendment on May 28, 1985.

Application of the revised limits would, in effect, make it impossible to perform the hydrostatic test while the fuel is in the reactor vessel. The

licensee has, therefore, requested that the effective date of Amendment No. 121 be revised from May 28, 1985 to July 31, 1985 (after the June 21, 1985 scheduled hydrostatic test date).

2.0 EVALUATION

In order to comply with Amendment No. 121, the licensee will have to unload the fuel before performing the hydrostatic test. Alternatively the licensee can perform that test while adhering to the limits which were in effect prior to Amendment No. 121. The reactor has not yet achieved six EFPY of operation and, therefore, the old limits are still valid. The revised limits are based on the vessel's estimated fracture toughness at completion of twelve EFPY. Those limits are therefore extremely conservative for use at this time and require unloading and reloading of the fuel. The licensee states that such a requirement will further delay completion of the current outage.

DAEC is currently in the Cycle 7/8 refueling outage and will undergo a 10-year hydrostatic test in accordance with 10 CFR 50, Appendix G, and with the constraints of applicable pressure-temperature limits on the pressure vessel. The licensee, in a letter dated June 14, 1985, stated that the current (Cycle 7/8) refueling outage has been extended beyond the time scheduled (by the licensee) when application for Amendment No. 121 was submitted to the NRC. As a result of the extension of the current refueling outage, and the NRC approval of Amendment No. 121, the licensee's 10-year hydrostatic test will be subject to the pressure-temperature limits of Amendment No. 121 and would require the reactor water to be heated above 212°F in order to achieve the requisite vessel metal temperatures. Exceeding the 212°F water temperature after the fuel has been loaded in the reactor would actuate DAEC Technical Specification sections which require that the safety relief valves and Emergency Core Cooling System (ECCS) functions should be operable. The licensee states that with safety relief valves operable and set at their setpoints, requisite hydrostatic pressure cannot be achieved. The only way that the hydrostatic tests can be conducted subject to the Amendment No. 121 limits, is by removing the fuel from the reactor. The licensee states that the removal of fuel requires unnecessary fuel-handling operations which would contribute to additional lengthening of the current refueling outage.

The licensee states that the first six effective full power years of operation will be completed approximately 45 days after the Cycle 8 operation is commenced. Therefore, compliance with Amendment No. 121 is not required for the safe and satisfactory conduct of vessel hydrostatic tests prior to restart. The licensee requests that Amendment No. 121 be revised by changing the effective date of the amendment from May 28, 1985 to July 31, 1985, thus permitting the 10-year vessel hydrostatic tests to be conducted subject to the first six effective full power years pressure-temperature limits which assure that the water temperature will not exceed 212°F and fuel removal will not be required to satisfactorily complete the tests.

The staff evaluation indicates that revising the effective date of Amendment No. 121 would permit the licensee to perform the 10-year hydrostatic tests of the DAEC pressure vessel in accordance with the pressure-temperature limits approved (in accordance with the regulations) by the NRC for the first six effective full power years of operation. The evaluation of the fracture toughness properties of the DAEC pressure vessel, taking into account the neutron and thermal environment of six effective full power years of operation, showed that the hydrostatic tests performed with the previously-approved pressure-temperature limits will assure adequate margins against nonductile failure of the pressure vessel until the next hydrostatic test.

The staff therefore finds that the hydrostatic testing, conducted in accordance with the pressure-temperature limits associated with the first six effective full power years of operation, meets the Commission's regulations and is acceptable, and the effective date of Amendment No. 121 can be revised from May 28, 1985 to July 31, 1985.

3.0 CONCLUSIONS

3.1 Final No Significant Hazards Consideration Determination

3.1.1 State Consultation

In accordance with the Commission's regulations, consultation was held with the State of Iowa Commerce Commission, by telephone. The State expressed no concern over the proposed revision to the Amendment No. 121 effective date, in view of the fact that the licensee will perform the vessel hydrostatic tests in accordance with valid pressure-temperature limits.

3.1.2 Response to Comments

No comments were received. A notice of the proposed amendment was not published in the FEDERAL REGISTER due to the lack of sufficient time for public comment prior to the expected plant startup date (July 3, 1985).

3.1.3 No Significant Hazards Consideration Determination

The Commission's regulations in 10 CFR 50.92 state that the Commission may make a final determination that a proposed license amendment 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.

The information in this Safety Evaluation provides the basis for evaluating the proposed license amendment against these criteria. The licensee will perform the hydrostatic tests in accordance with the pressure-temperature limits previously approved and still applicable until July 31, 1985 in accordance with the NRC regulations. Therefore, the staff concludes that:

- (1) Operation of the facility in accordance with the proposed amendment would not significantly increase the probability or consequences of an accident previously evaluated.
- (2) Operation of the facility in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.
- (3) Operation of the facility in accordance with the proposed amendment would not involve a significant reduction in a margin of safety.

Accordingly, we conclude that the amendment to Facility Operating License No. DPR-49 revising the effective date of Amendment No. 121 from May 28, 1985 to July 31, 1985, involves no significant hazards consideration.

4.0 ENVIRONMENTAL CONSIDERATIONS

This amendment involves a change in the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes in surveillance requirements. 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 made a final no significant hazards consideration finding with respect to this amendment. 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

We have 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, and (2) 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.

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Dated: June 20, 1985