



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 153 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 August 31, 1987, Iowa Electric Light and Power Company, et al., requested changes to the Duane Arnold Energy Center (DAEC) Technical Specifications (TS's). The proposed changes would delete the requirement that both emergency diesel generators (EDG's) be operable for the standby gas treatment system (SGTS) and the main control room ventilation standby filter units (SFU's) to be considered operable. The proposed changes would also add a specification to clarify the requirements for availability of certain auxiliary AC power sources and emergency filtration systems during core alterations, and would make other minor word changes for clarification. An additional change to extend the EDG inspection interval from 1 year to 18 months was the subject of Amendment No. 149 to Operating License No. DPR-49, issued February 23, 1988.

2.0 EVALUATION

Currently, DAEC TS's 3.7.B.1 and 3.10.A.1 explicitly require that the EDG's be operable in addition to the standby gas treatment system and the main control room ventilation system SFU's during periods when secondary containment is required. This restriction (i.e., the need for both EDG's to be operable for the other systems to be considered operable) is not addressed in the TS bases and is inconsistent with the DAEC TS definition of "LIMITING CONDITIONS FOR OPERATION" and the BWR Standard Technical Specifications (STS's). The DAEC TS definition of "LIMITING CONDITIONS FOR OPERATION" states, in part, "When a system, subsystem, train, component or device is determined to be inoperable solely because its emergency power source is inoperable, or solely because its normal power source is inoperable, it may be considered OPERABLE for the purpose of satisfying the requirements of its applicable Limiting Condition for Operation, provided: (1) its corresponding normal or emergency power source is OPERABLE; and (2) all of its redundant system(s), subsystems(s), trains(s), components(s) and devices(s) are OPERABLE, or likewise satisfy the requirements of this specification."

8810110194 880930
PDR ADOCK 05000331
PDC

During power operation, core alterations or any other time that secondary containment is required, normal electrical power to both trains of the SGTS and both SFU subsystems will be available and will be supplemented by the two EDG's. During power operation, if one EDG is determined to be inoperable, T.S. 3.5.G.1 requires that it be restored to operable status within 7 days, or an orderly reactor shutdown be initiated. This requirement effectively duplicates those of TS's 3.7.B.3 and 3.10.A.3; i.e., a 7-day Limiting Condition for Operation (LCO) is entered due to an inoperable EDG. Therefore, during power operation, the proposed removal of references to EDG operability in TS's 3.7.B.1 and 3.10.A.1 would not change the existing requirement, which will be retained in TS 3.5.G.1.

During core alterations, current TS's 3.7.B.1 and 3.10.A.1 severely limit the licensee's ability to perform maintenance on one EDG in parallel with refueling activities, as a 7-day LCO would have to be entered due to EDG inoperability. This restriction results in longer refueling outages as extensive required EDG inspections must be performed prior to fuel movement. Deleting the specific requirements for operability of both EDG's when secondary containment is required is consistent with STS's 3.6.5.3, 3.7.2 (which have no such specific requirement), and the DAEC TS definition of "LIMITING CONDITIONS FOR OPERATION," which explicitly states that a system may be considered operable when only its emergency power source is inoperable.

The addition of proposed TS 3.9.D would further clarify requirements during core alterations. The proposed TS would require operability of at least one off-site power source, one startup or standby transformer, and one EDG with its associated train of SGTS and SFU, or core alterations would not be permitted. In sections 6.5.3.3 and 15.7.2.5 of the Final Safety Analysis Report (FSAR) for the DAEC, the licensee has indicated that a single train of the SGTS and one SFU subsystem have sufficient capacity to perform the systems' functions as analyzed for the spectrum of design basis accidents. Consequently, the addition of this specification will provide added assurance that redundant power sources will be available so that the design function of the SGTS and SFU's will be met during core alterations. In addition, revised TS's 3.7.B.1 and 3.10.A.1 would still require both trains of the SGTS and both SFU subsystems to be operable whenever secondary containment is required, including during core alterations.

In summary, the proposed deletion of the specific requirement for both EDG's to be operable for the SGTS and SFU's to be considered operable (current TS's 3.7.B.1 and 3.10.A.1) is acceptable for the following reasons:

- (1) During power operation, the requirements for EDG operability will remain unchanged.
- (2) During core alterations, the addition of new TS 3.9.D will require that redundant power sources are available for at least one train of SGTS and one SFU subsystem. The licensee's FSAR indicates that a single train of the SGTS or SFU subsystem has sufficient capacity to perform the design function. Therefore, during core alterations, at

least two independent power supplies will still be required to ensure adequate power to the SGTS and SFU's.

- (3) At all times when secondary containment is required, both trains of the SGTS and SFU subsystems will still be required to be operable, consistent with the DAEC TS definition of "LIMITING CONDITIONS FOR OPERATION" and the STS.

On these bases, the staff approves the proposed changes to DAEC TS's 3.7.B.1 and 3.10.A.1 and the addition of proposed TS 3.9.D.

The remainder of the proposed changes are minor wording changes for clarity and consistency.

Revised TS 3.7.B.1 capitalizes the phrase "SECONDARY CONTAINMENT INTEGRITY," consistent with the practice for all terms listed in the TS definitions.

Revised TS 3.7.B.3 makes some minor editorial changes without affecting the requirements of the specification.

Revised TS 3.7.B.4 specifies that the reactor shall be placed in the "COLD SHUTDOWN" condition within 24 hours, consistent with other requirements in the DAEC TS and the STS. The current specification has no specified time requirement.

The bases on pages 3.7-43, 3.7-46 and 3.10-4 are revised to reflect the changes to TS's 3.7.B.1 and 3.10.A.1.

TS 3.8.B.4 is added, which only references new TS 3.9.D.

TS's 3.10, 3.10.A.1, and 3.10.A.3 are revised to refer to the main control room ventilation standby filter unit system and subsystems, for consistency with plant procedures. The existing TS's refer to the "control room air treatment system" and "main control room ventilation system." Page 3.7-45a is deleted and pages 3.7-46 and 3.7-47 are reformatted to make the bases easier to read.

The staff finds these remaining proposed changes to be acceptable, as they are minor editorial changes that improve the clarity and consistency of the DAEC TS.

3.0 ENVIRONMENTAL CONSIDERATIONS

This amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or changes 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 the amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, the 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 the amendment.

4.0 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, and (2) 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 security or to the health and safety of the public.

Principal Contributor: James R. Hall

Dated: September 30, 1988