



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 56 TO FACILITY OPERATING LICENSE NO. NPF-62

ILLINOIS POWER COMPANY, ET AL.

CLINTON POWER STATION, UNIT NO. 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter dated June 30, 1989, Illinois Power Company (IP) (the licensee), requested an amendment to Facility Operating License No. NPF-62 for the Clinton Power Station. The proposed amendment would provide exceptions to Sections 3.0.4 in the Technical Specifications (TS). The exceptions would allow entry into certain operational conditions (OC) without meeting the Limiting Conditions for Operation (LCO), provided the requirements of associated action statements are met.

The proposed TS changes would provide greater operational flexibility during refueling outages while ensuring that adequate core decay heat removal capability and emergency core cooling system (ECCS) availability are maintained.

The proposed changes would allow the following evolutions or events to occur during a refueling outage while operating under the provisions of the applicable ACTION statement(s):

- (a) Lowering reactor cavity/upper containment pool water level below 23 feet above the reactor pressure vessel flange,
- (b) Detensioning the reactor vessel head, and
- (c) Raising reactor cavity/upper containment pool water level from below to greater than or equal to 23 feet above the reactor pressure vessel flange.

These evolutions involve a mode change, i.e., entry into a different or applicable "OPERATIONAL CONDITION or other specified condition." A 3.0.4 exemption is thus required to permit such evolutions to occur while an applicable ACTION statement is in effect.

Section 3.0.4 in the Technical Specifications states:

Entry into an OPERATIONAL CONDITION or other specified condition shall not be made unless the conditions in the Limiting Conditions for Operation are met without reliance on provisions contained in

the ACTION requirements. This provision shall not prevent passage through or to OPERATIONAL CONDITIONS as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual Specifications.

The proposed changes to the TS as identified in the June 30, 1989 submittal would provide exceptions to Specification 3.0.4 to be used in the following areas:

The proposed change would add a statement to Action a of TS 3.5.2 (ECCS - Shutdown) to state that the provisions of Specification 3.0.4 are not applicable.

The proposed change also will add a new Action c to TS 3.9.11.1 and 3.9.11.2 (RHR and Coolant Recirculation - High and Low Water Level) to state that provisions of Specification 3.0.4 are not applicable for lowering or increasing reactor cavity water level.

3.0 EVALUATION

Raising or lowering reactor cavity water level above or below 23 feet above the reactor vessel flange impacts the ECCS OPERABILITY requirements specified in CPS Technical Specification 3.5.2. This is due to the associated "*" note which provides relief from the requirement to have two ECCS subsystems/systems OPERABLE providing that the reactor cavity/upper containment pool water level is greater than or equal to 23 feet above the reactor flange (and other less restrictive requirements are met).

Under the current Technical Specification 3.5.2, a reduction in the reactor cavity/upper containment pool level to less than 23 feet is not permitted unless at least two ECCS subsystems/systems are OPERABLE. Incorporating a 3.0.4 exemption into ACTION "a" of Specification 3.5.2 would permit reactor cavity water level to be reduced below 23 feet with one ECCS OPERABLE. Accordingly, the ACTION would then require a second ECCS to be OPERABLE within 4 hours (or else all operations with a potential for draining the reactor vessel must be stopped).

As an example, during one portion of the current outage, the reactor cavity water level will be lowered to perform various maintenance activities. During this time, the high pressure core spray system (HPCS) may be inoperable for maintenance and surveillance on the HPCS and Division III diesel generator. The low pressure coolant injection (LPCI) A and B loops may also be inoperable during this outage window due to scheduled maintenance of the motor operated valve of the common suction line. This leaves the low pressure core spray system (LPCS) and LPCI loop C as the operable systems at the initiation of the drainage. If LPCI loop C or LPCS becomes inoperable, this condition puts the TS in the Action "a" statement. The exception to TS 3.0.4 allows an OC change during the lowering of water level with one ECC system inoperable. This exception is only needed in the 1- to 2-day period in the outage until the inoperable system is again made operable to serve as the second required ECCS.

The staff concludes that lowering the water level in the reactor cavity when one ECCS subsystem is inoperable is allowable because (1) the remaining subsystem, the LPCI or the LPCS, will be automatically actuated upon detection of low reactor vessel water level; (2) the exception will be used only during the short duration of the activity; and (3) water is drained through the spent fuel pool cooling and clean-up system and has no effect on the potential for draining the reactor vessel. Accordingly, the requested exception to TS 3.0.4 for TS 3.5.2, Action Statement a, is acceptable.

With the requested exemption from TS 3.0.4, the licensee would be permitted to raise or lower the reactor cavity/upper containment water level above or below the level of 23 feet above the reactor flange, (which is considered a change in MODE), while LCO ACTION statements for TS 3.9.11.1 and TS 3.9.11.2 are in effect. These ACTION statements permit operation with alternate decay heat removal methods other than the RHR system for unlimited periods of time. Because the operations which involve the change in level are short term in nature, i.e. normal refueling evolutions, and do not increase the potential for draining the reactor vessel, (because draining to lower water level is done through the spent fuel pool cooling and clean-up system) removal of the TS 3.0.4 requirement as it applies to TS 3.9.11.1 and TS 3.9.11.2 is not a safety concern and is therefore, acceptable.

Without a 3.0.4 exemption in ACTION "a" of Specification 3.5.2 and in the ACTION statement of Specifications 3.9.11.1 and 3.9.11.2, all required ECCS and residual heat removal (RHR) systems would have to be OPERABLE during the period that reactor cavity water level is reduced below 23 feet. The staff believes this is an unnecessary restriction and that the incorporation of the noted 3.0.4 exemptions is an acceptable change in view of the following:

- (a) With respect to core decay heat removal and coolant circulation, the requirements of the ACTION statement of Specification 3.9.11.1 and 3.9.11.2 provide for alternate means to meet these concerns.
- (b) One purpose of the proposed change is to accommodate short term drops in reactor cavity/upper containment pool water level that may occur, for example, during operational evolutions associated with the fuel pool cooling and cleanup system. The normal reactor cavity/upper containment pool water level at Clinton is 23 feet - 1/4 inch. (This corresponds to the level of the pool scuppers and skimmers.) Since the Technical Specification limit is 23 feet, there is very little allowance for perturbations in the pool level. A short term drop of greater than one-fourth inch can result in a violation of Specification 3.0.4 if, for example, two ECCS and two RHR shutdown cooling mode loops were not currently declared OPERABLE during the level perturbation.
- (c) The 3.0.4 exemptions could not be utilized when handling fuel assemblies or control rods within the reactor pressure vessel when the fuel assemblies being handled are irradiated or the fuel

assemblies seated within the reactor vessel are irradiated because Technical Specification 3.9.8 requires 23 feet of water to be maintained over the top of the reactor pressure vessel flange during these conditions.

The proposed exceptions to TS 3.0.4 are acceptable, as requested, because the compensatory measures described in this safety evaluation are acceptable alternatives to meeting the LCO requirements.

3.0 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.

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 this amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: G. Thomas

Dated: December 11, 1990