May 2, 1995

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Mr. Richard F. Phares
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Clinton Power Station
P. O. Box 678
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Clinton, IL 61727

SUBJECT: ISSUANCE OF AMENDMENT NO. 100 TO FACILITY OPERATING LICENSE NO. NPF-62 - CLINTON POWER STATION, UNIT 1 (TAC NO. M91555)

Dear Mr. Phares:

The U. S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 100 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. The amendment is in response to your application dated February 10, 1995 (U-602406).

The amendment modifies Technical Specification 3.3.2.1, "Control Rod Block Instrumentation," to revise two surveillance requirements and their associated notes for the Rod Withdrawal Limiter mode of the Rod Pattern Control System. The changes are consistent with the Clinton Power Station Technical Specifications prior to implementation of the improved Technical Specifications (Amendment No. 95) and eliminates the potential for unnecessary power reductions.

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,
ORIGINAL SIGNED BY:
Douglas V. Pickett, Project Manager
Project Directorate III-3
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Docket No. 50-461
Enclosures: 1. Amendment No. 100 to License No. NPF-62
2. Safety Evaluation
cc w/encls: See next page

*See previous concurrence.

DOCUMENT NAME: G:\CLINTON\CLI91555.AMD

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 2, 1995

Mr. Richard F. Phares
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2. Safety Evaluation

cc w/encls: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ILLINOIS POWER COMPANY, ET AL.

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 100
License No. NPF-62

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Illinois Power Company* (IP), and Soyland Power Cooperative, Inc. (the licensees) dated February 10, 1995, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

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

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-62 is hereby amended to read as follows:

*Illinois Power Company is authorized to act as agent for Soyland Power Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 100 , are hereby incorporated into this license. Illinois Power Company shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Douglas V. Pickett, Project Manager
Project Directorate III-3
Division of Reactor Projects - III/IV
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical Specifications

Date of Issuance: May 2, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 100

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

Replace the following pages of the Appendix "A" Technical Specifications with the attached pages. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages	Insert Pages
3.3-16	3.3-16
3.3-18	3.3-18

SURVEILLANCE REQUIREMENTS

----------NOTES----------

1. Refer to Table 3.3.2.1-1 to determine which SRs apply for each Control Rod Block Function.

2. When a channel is placed in an inoperable status solely for performance of required Surveillances, entry into associated Conditions and Required Actions may be delayed for up to 6 hours provided the associated Function maintains control rod block capability.

SURVEILLANCE		FREQUENCY
SR 3.3.2.1.1	----------NOTE---------- Not required to be performed until 1 hour after THERMAL POWER is greater than the RWL high power setpoint (HPSP). ---------- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.2	----------NOTE---------- Not required to be performed until 1 hour after THERMAL POWER is > 35% RTP and less than or equal to the RWL HPSP. ---------- Perform CHANNEL FUNCTIONAL TEST.	92 days
SR 3.3.2.1.3	----------NOTE---------- Not required to be performed until 1 hour after any control rod is withdrawn in MODE 2. ---------- Perform CHANNEL FUNCTIONAL TEST.	92 days

(continued)

Table 3.3.2.1-1 (page 1 of 1)
Control Rod Block Instrumentation

FUNCTION	APPLICABLE MODES OR OTHER SPECIFIED CONDITIONS	REQUIRED CHANNELS	SURVEILLANCE REQUIREMENTS
1. Rod Pattern Control System			
a. Rod withdrawal limiter	(a)	2	SR 3.3.2.1.1 SR 3.3.2.1.6 SR 3.3.2.1.9
	(b)	2	SR 3.3.2.1.2 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9
b. Rod pattern controller	1[(c)],2	2	SR 3.3.2.1.3 SR 3.3.2.1.4 SR 3.3.2.1.5 SR 3.3.2.1.7 SR 3.3.2.1.9
2. Reactor Mode Switch – Shutdown Position	(d)	2	SR 3.3.2.1.8

(a) THERMAL POWER greater than the RWL HPSP.

(b) THERMAL POWER > 35% RTP and less than or equal to the RWL HPSP.

(c) With THERMAL POWER ≤ 20% RTP.

(d) Reactor mode switch in the shutdown position.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 100 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

The Clinton Power Station implemented the improved Technical Specifications (ITS) on January 1, 1995. These were adapted from NUREG-1434, "Standard Technical Specifications, General Electric Plants, BWR/6," and included significant changes to both format and content.

Technical Specification 3.3.2.1, "Control Rod Block Instrumentation," requires quarterly performance of channel functional tests to verify that the rod withdrawal limiter (RWL) automatically inserts rod blocks as designed. As described in the following evaluation, the revised surveillance requirements included in NUREG-1434 changed the conditions for performing these tests. These changes inadvertently introduced a situation where the licensee may be forced to reduce power in order to successfully perform the channel functional tests.

By letter dated February 10, 1995, the licensee proposed changes to Technical Specification 3.3.2.1 to revise two surveillance requirements and their associated notes for the Rod Withdrawal Limiter mode of the Rod Pattern Control System. These changes would return the Technical Specifications to their original intent and eliminate the potential for unnecessary power reductions.

2.0 EVALUATION

During high power operation, the RWL provides protection for control rod withdrawal error events. Specifically, the purpose of the RWL is to limit control rod withdrawal to preclude violation of the Minimum Critical Power Ratio (MCPR) Safety Limit and the cladding 1% plastic strain fuel design limit that could result from a single control rod withdrawal error event.

Analyses performed by the licensee, which is described in Chapter 15 of the Updated Final Safety Analysis Report, has identified the restrictions that must be placed on control rod drive withdrawals in order to avoid exceeding MCPR Safety Limits. Based on these analyses, there is no need to restrict continuous control rod withdrawal at power levels below 35% rated thermal power (RTP). At power levels of 35% RTP and greater, continuous control rod

withdrawal must be limited to four-notch (i.e., two foot) increments. Furthermore, at power levels of 70% RTP and greater, continuous control rod withdrawal must be limited to two-notch (i.e., one foot) increments. Control rod blocks are automatically inserted by the RWL to prevent continuous rod withdrawal beyond these setpoints. The 35% and 70% power levels are analytical limits and correspond to the low-power setpoint (LPSP) and high-power setpoint (HPSP), respectively.

The RWL automatically establishes the two and four-notch rod withdrawal limitations based on the reactor power level as measured by the main turbine first stage pressure. Technical Specifications require quarterly verification of these rod withdrawal limits through the performance of channel functional tests. Surveillance requirements (SRs) 3.3.2.1.1 and 3.3.2.1.2 include channel functional tests that verifies the two-notch and four-notch rod withdrawal limit, respectively. SR 3.3.2.1.1, which verifies the two-notch limit, is required to be performed within one hour after exceeding 70% RTP. Similarly, SR 3.3.2.1.2, which verifies the four-notch limit, is required to be performed within one hour after RTP is greater than 35% or less than or equal to 70%. SR 3.3.2.1.2 may be performed while either increasing or decreasing reactor power levels. As stated in the Bases, the one hour test requirement is provided to allow entry into the appropriate conditions needed to perform the channel functional tests.

While the analytical LPSP and HPSP limits correspond to 35% and 70% RTP, the licensee has conservatively set the automatic rod block setpoints at lower power levels. A lower power level accounts for instrument uncertainties, instrument drift and the affects of reduced feedwater heating. By placing these setpoints at a conservatively lower power level, the licensee ensures that MCPR Safety Limits will not be approached. At the Clinton Power Station, the actual HPSP is set to approximately 52% RTP as opposed to the analytical limit of 70% RTP. Thus, when reactor power reaches 52% RTP, the rod withdrawal limiter automatically restricts rod motion to two notches.

The revised wording of NUREG-1434 has potentially introduced some operational difficulties. During normal plant startup and power ascension, the LPSP will be reached prior to the analytical limit of 35% RTP. At this point, the RWL will automatically limit individual control rod withdrawal to four notches. While this restriction can be viewed as conservative, it occurs earlier than required by Technical Specifications. Similarly, when the actual HPSP of 52% RTP is reached, the rod withdrawal limiter automatically limits control rod withdrawals to two notches even though the Technical Specifications would not require such a restriction until the power level reached 70% RTP.

Operational difficulties can arise when power levels are being lowered. When power levels are lowered below 70% RTP, Technical Specifications require performance of a channel functional test within one hour that verifies a four-notch rod block. However, the four-notch rod block will not become effective until the actual HPSP of 52% RTP is reached. Plant conditions may not permit a reduction in power from 70% to 52% within one hour. Such a situation would require that the rod withdrawal limiters be declared inoperable and Technical Specification action statements would suspend further control rod withdrawals.

Reactor power would then have to be lowered via other means (e.g., recirculation flow control valves) below the HPSP, so that the channel functional tests could be successfully performed. This scenario would require an unnecessary power reduction.

A similar situation does not exist when power levels are lowered below 35% RTP. This is because surveillance requirements do not require verification that rod blocks from the RWL have been removed.

Prior to the issuance of Amendment No. 95 to the Clinton Power Station, the channel functional tests were required to be performed within one hour of exceeding the LPSP or the HPSP. However, with the introduction of the improved Technical Specifications (Amendment No. 95), the LPSP and HPSP limits were replaced with the analytical limits of 35% and 70% RTP. Therefore, by letter dated February 10, 1995, the licensee proposed changes to the technical specifications that would replace references to analytical limits thus returning these technical specifications to their previous requirements.

The staff has reviewed the licensee's proposal and concludes that the proposed changes continue to ensure that 1) the RWL remains operable and that 2) continuous control rod withdrawals remain within the assumptions of the rod withdrawal error analysis. In addition, the staff concludes that the proposed changes are consistent with the licensee's Technical Specifications prior to implementing NUREG-1434. Considering that the staff previously found these Technical Specifications to be acceptable and that the revised wording may prevent unnecessary power reductions in the future, the staff finds the proposed changes acceptable.

3.0 STATE CONSULTATION

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

4.0 ENVIRONMENTAL CONSIDERATION

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 and changes surveillance requirements. The NRC 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 (60 FR 16190). 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.

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.

Principal Contributor: Douglas V. Pickett

Date: May 2, 1995