March 21, 1995

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Mr. Richard F. Phares
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Clinton Power Station
P. O. Box 678
Mail Code V920
Clinton, IL 61727

SUBJECT: ISSUANCE OF AMENDMENT NO. 99 TO FACILITY OPERATING LICENSE NO. NPF-62 - CLINTON POWER STATION, UNIT 1 (TAC NO. M91519)

Dear Mr. Phares:

The U. S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 99 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 14, 1995 (U-602417).

The amendment revises Technical Specification 3.8.2, "AC Sources-Shutdown;" 3.8.5, "DC Sources-Shutdown;" and 3.8.8, "Inverters-Shutdown." The changes revise the operability requirements for the Division 3 diesel generator and the Division 3 and 4 batteries, battery chargers and inverters to apply only when the high pressure core spray system is required to be operable.

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

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

Enclosures: 1. Amendment No. 99 to NPF-62
2. Safety Evaluation

cc w/encls: see next page

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*See previous concurrences

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

March 21, 1995

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Director - Licensing
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Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Enclosures: 1. Amendment No. 99 to NPF-62
2. Safety Evaluation

Docket No. 50-461

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. 99
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 14, 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. 99 , 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: March 21, 1995

ATTACHMENT TO LICENSE AMENDMENT NO. 99

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
3.8-16	3.8-16
3.8-27	3.8-27
3.8-36	3.8-36

3.8 ELECTRICAL POWER SYSTEMS

3.8.2 AC Sources—Shutdown

LCO 3.8.2 The following AC electrical power sources shall be OPERABLE:

a. One qualified circuit between the offsite transmission network and the onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems—Shutdown";

b. One diesel generator (DG) capable of supplying one division of the Division 1 or 2 onsite Class 1E AC electrical power distribution subsystem(s) required by LCO 3.8.10; and

c. One qualified circuit, other than the circuit in LCO 3.8.2.a, between the offsite transmission network and the Division 3 onsite Class 1E AC electrical power distribution subsystem, or the Division 3 DG capable of supplying the Division 3 onsite Class 1E AC electrical power distribution subsystem, when the High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "ECCS-Shutdown."

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the primary or secondary containment.

ACTIONS

---NOTE---
LCO 3.0.3 is not applicable.

(continued)

3.8 ELECTRICAL POWER SYSTEMS

3.8.5 DC Sources—Shutdown

LCO 3.8.5 The following shall be OPERABLE:

a. One Class 1E DC electrical power subsystem capable of supplying one division of the Division 1 or 2 onsite Class 1E DC electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown";

b. One Class 1E battery or battery charger, other than the DC electrical power subsystem in LCO 3.8.5.a, capable of supplying the remaining Division 1 or Division 2 onsite Class 1E DC electrical power distribution subsystem(s) when required by LCO 3.8.10; and

c. The Division 3 and 4 DC electrical power subsystems capable of supplying the Division 3 and 4 onsite Class 1E DC electrical power distribution subsystems, when the High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "ECCS-Shutdown."

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the primary or secondary containment.

3.8 ELECTRICAL POWER SYSTEMS

3.8.8 Inverters—Shutdown

LCO 3.8.8 The following Divisional inverters shall be OPERABLE:

a. One Divisional inverter capable of supplying one division of the Division 1 or 2 onsite Class 1E uninterruptible AC bus electrical power distribution subsystem(s) required by LCO 3.8.10, "Distribution Systems - Shutdown"; and

b. The Division 3 and 4 Divisional inverters capable of supplying the Division 3 and 4 onsite Class 1E uninterruptible AC bus electrical power distribution subsystems, when the High Pressure Core Spray System is OPERABLE for compliance with LCO 3.5.2, "ECCS-Shutdown."

APPLICABILITY: MODES 4 and 5,
During movement of irradiated fuel assemblies in the primary or secondary containment.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 99 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 in both format and content. The ITS permitted limited relaxation to some of the Technical Specification (TS) requirements, more restrictions to other TS requirements and relocation of other requirements to licensee controlled documents.

Some of the more restrictive requirements resulting from the ITS are found in the shutdown requirements of TS 3.8, "Electrical Power Systems." This portion of the ITS is less prescriptive than the former TSs in that it does not address individual components or systems. However, new TS 3.8 is more restrictive in that it requires more components to be operable while in the shutdown modes. Limited Condition for Operation (LCO) 3.8.10, "Distribution Systems-Shutdown," states:

> The necessary portions of the Division 1, 2, and 3 AC, Division 1, 2, 3, and 4 DC, and Division 1, 2, 3, and 4 uninterruptible AC bus electrical power distribution subsystems shall be OPERABLE to support equipment required to be OPERABLE.

Some of the equipment required to be operable is determined from TS 3.5.2, "ECCS-Shutdown," which requires that two ECCS injection/spray subsystems shall be operable during MODES 4 and 5. One of the ECCS systems that could be required to be operable during these modes is the high pressure core spray (HPCS) system. At the Clinton Power Station, the HPCS system is powered from the Division 3 diesel generator. The HPCS system is supported by the Division 3 and 4 DC electrical power distribution subsystems.

Technical Specifications 3.8.2, "AC Sources-Shutdown;" 3.8.5, "DC Sources-Shutdown;" and 3.8.8, "Inverters-Shutdown," have similar wording that links operability of Division 3 AC or Division 3 and 4 DC systems to those systems required to be operable by LCO 3.8.10. Specifically, TS 3.8.2 requires operability of a separate offsite circuit or the Division 3 diesel generator when the Division 3 onsite Class 1E electrical power distribution subsystem is required to be operable; TS 3.8.5 requires operability of the Division 3 and 4

DC electrical power subsystems when the Division 3 and 4 onsite Class 1E DC electrical power distribution subsystems are required to be operable; and TS 3.8.8 requires operability of the Division 3 and 4 inverters when the Division 3 and 4 onsite Class 1E uninterruptible AC bus electrical power distribution subsystems are required to be operable. Operability of the inverters requires operability of the associated batteries and battery chargers.

The former TSs only required the above systems to be operable when the HPCS system was required to be operable. However, the ITS introduced additional restrictions because the Division 3 and 4 DC systems have loads beyond the HPCS system. Since some of these non-HPCS Division 3 and 4 loads must remain operable during MODES 4 and 5, TS 3.8.10 requires that the components identified in TSs 3.8.2, 3.8.5 and 3.8.8 remain operable. These new restrictions reduce the licensee's operational flexibility and will have a significant impact on the fifth refueling outage which began on March 12, 1995.

Accordingly, by letter dated February 14, 1995, the licensee proposed changes to the Technical Specifications that would revise the operability requirements for the Division 3 diesel generator and the Division 3 and 4 batteries, battery chargers, and inverters to apply only when the high pressure core spray system is required to be operable.

2.0 EVALUATION

TS 3.8.10, "Inverters-Shutdown"

TS 3.8.8 requires operability of the Division 3 and 4 inverters when the Division 3 and 4 onsite Class 1E uninterruptible AC bus electrical power distribution subsystems are required to be operable. The Clinton Power Station has a solid state logic protection system and has four divisions of 120 VAC uninterruptible power. The Division 1, 2, 3 and 4 uninterruptible AC buses are supplied from the inverters which, in turn, are supplied by the battery chargers and batteries. The proposed changes would permit the batteries, battery chargers and inverters to be taken out-of-service if the HPCS system is not required to be operable. With these components out-of-service, the 120 VAC buses would no longer have an uninterruptible power supply and would be powered from the alternate AC source.

The Division 3 and 4 inverters supply a number of non-HPCS loads that must be operable during MODES 4 and 5. These non-HPCS loads are powered from the 120 VAC buses and would normally be powered by an uninterruptible power supply. These loads, which require operability by the Technical Specifications, consist of:

- Several Reactor Protection System (RPS) functions per LCO 3.3.1.1, "RPS Instrumentation," (including Intermediate Range Monitor Neutron Flux, Scram Discharge Volume Water Level, Reactor Mode Switch - Shutdown Position, and manual scram functions);

- Source Range Neutron Monitors (SRMs) per LCO 3.3.1.2, "SRM Instrumentation;"

- Actuation instrumentation for the HPCS System and Division 3 DG per LCO 3.3.5.1, "ECCS Instrumentation," including the Low Reactor Water Level (Level 2) Function;"

- Isolation actuation instrumentation for primary containment, the Reactor Water Cleanup System, and the RHR System shutdown cooling suction line per LCO 3.3.6.1, "Primary Containment and Drywell Isolation Instrumentation," including the Low Reactor Water Level (Level 1, Level 2 and Level 3) and manual isolation functions;

- Isolation actuation instrumentation for secondary containment isolation dampers and the Standby Gas Treatment System (SGTS) per LCO 3.3.6.2, "Secondary Containment Isolation Instrumentation," including the Low Reactor Water Level (Level 2) and manual isolation functions;

- Loss of power instrumentation for the Division 3 DG per LCO 3.3.8.1, "Loss of Power Instrumentation;" and

- Control power for the HPCS System when required by LCO 3.5.2, "ECCS-Shutdown."

As a result of the proposed changes, the above loads may not be powered by an uninterruptible power supply when HPCS is not required to be operable. Therefore, the licensee has examined the consequences of losing these loads during MODES 4 or 5. The licensee's analysis determined that with the exception of the SRMs, support of the HPCS system, and actuation of the Division 3 diesel generator, the above components fail in a safe condition upon loss of power. That is, upon deenergization of the associated uninterruptible AC bus, the safety function will automatically be performed by generating a scram, control rod block, isolation, actuation, or inhibit signal, as applicable.

The staff discussed the consequences of losing power to the above components with the licensee. In particular, the staff focused on the RHR shutdown cooling lines and questioned whether a loss of power and its subsequent restoration would result in an inadvertent isolation of the shutdown cooling lines. The licensee confirmed that a power-on initialization circuit would block any isolation signals for three seconds thus blocking out any spurious isolation signals that may accompany a resumption of power. The staff therefore concurred with the licensee's analysis that, with the exception of the SRMs, the components would fail in the safe position.

The proposed change will permit the SRMs to be powered from a non-uninterruptible power supply. Neither TS 3.3.1.2, "Source Range Monitor (SRM) Instrumentation," nor the definition of operability requires that the SRMs be powered from an uninterruptible power supply. As discussed in the Bases, the SRMs have no safety function and are not assumed to function during any design basis accident or transient. Only two of the four SRMs are required to be

operable during MODES 4 and 5 and their only purpose is to monitor neutron flux. If the SRMs become inoperable, TSs require that core alterations be suspended (except to insert control rods) and that actions be immediately taken to insert all insertable control rods into core cells containing fuel. Since the reactor is designed to remain subcritical with the most reactive control rod fully withdrawn, shutdown requirements provide reasonable assurance that the core will remain subcritical if the SRMs become inoperable.

The Division 3 and 4 inverters will remain operable when the HPCS system is required to be operable. Therefore, the proposed changes will not impact the capability of the HPCS to perform its intended function.

TS 3.8.5, "DC Sources-Shutdown"

TS 3.8.5 requires operability of the Division 3 and 4 DC electrical power subsystems when the Division 3 and 4 onsite Class 1E DC electrical power distribution subsystems are required to be operable. The Division 3 and 4 batteries and battery chargers supply power to the inverters and the DC buses. The impact of the loss of power to the affected inverters is described above. The DC sources supply control power to the HPCS system and the Division 3 diesel generator. The proposed changes do not alter the requirement that both Division 3 and 4 batteries and battery chargers remain operable when the HPCS system is required to be operable by TS 3.8.10.

TS 3.8.2, "AC Sources-Shutdown"

TS 3.8.2 requires operability of a separate offsite circuit or the Division 3 diesel generator when the Division 3 onsite Class 1E electrical power distribution subsystem is required to be operable. The Division 3 AC distribution system supplies power to both the HPCS system and a number of systems that support HPCS operation. These support systems include the Division 3 shutdown cooling water pump and Division 3 switchgear room cooling. When HPCS is not required to be operable by TS 3.8.10, these support systems are not required to be operable. Therefore, the proposed changes do not alter the requirement that a separate offsite circuit or the Division 3 diesel generator will be operable when the HPCS system is required to be operable by TS 3.8.10.

The staff has reviewed the proposed changes and notes that (1) all electrical systems supporting HPCS operation will remain operable when the HPCS system is required to be operable by TS 3.8.10 and (2) the resulting changes will permit a number of non-HPCS Division 3 and 4 loads to be supplied by a non-uninterruptible power supply. The licensee's analysis determined that all the non-HPCS loads would fail in the fail-safe mode with the exception of the SRMs. As previously stated, the SRMs do not perform any safety function and Technical Specifications severely restrict refueling operations if the SRMS fail.

The proposed changes will permit the licensee to take both the Division 3 and 4 batteries out of service concurrently when the HPCS is not required to be operable. TS 3.8.5 also permits either the Division 1 or 2 battery to be

taken out-of-service. This could result in three of the four battery divisions being out-of-service concurrently during MODES 4 and 5. In response to staff questions on the outage schedule, the licensee stated that it is not their intent to have three divisions of batteries inoperable concurrently. During each refueling outage, the licensee performs battery discharge tests on each of the battery divisions. The licensee's practice is to have separate divisional outages between Division 1, Division 2 and the combined Divisions 3 and 4. Specifically, upon completion of the battery discharge test for Division 3, the licensee would begin recharging the Division 3 battery coincident with initiating the Division 4 battery discharge test. While both Division 3 and 4 batteries would be inoperable at the same time, they would both be operable prior to beginning a Division 1 or 2 battery test. The licensee also stated that man-power resources would restrict them from performing tests on three separate battery divisions. The staff was satisfied with this understanding.

The staff concludes that the licensee has adequately addressed the potential safety issues involved in the proposed changes. The licensee's request does not involve any changes to Division 1 or 2 Class 1E electrical power systems, nor does it involve any changes related to plant operation in Modes 1, 2 and 3. The proposed changes are limited to the operability requirements of Division 3 and 4 Class 1E electrical power systems during operating Modes 4 and 5. While the proposed changes represent a relaxation over the ITS, the staff concludes that the revised Technical Specifications will continue to provide adequate controls over plant operation in these modes. Therefore, the staff finds the licensee's 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. 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 9412). 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: March 21, 1995