October 3, 1996

Distribution w/encls:

Docket File	GHill (2)
PUBLIC	JRoe
PDIII-3 r/f	CGrimes
ACRS	OGC
JCaldwell, RIII	GMarcus

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

SUBJECT: ISSUANCE OF AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. NPF-62 - CLINTON POWER STATION, UNIT 1 (TAC NO. M95826)

Dear Mr. Phares:

The U. S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 107 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. The amendment is in response to your application dated June 28, 1996 (U-602587) and as supplemented by letter dated September 17, 1996 (U-602628).

The amendment will permit removal of the Inclined Fuel Transfer System (IFTS) primary containment blind flange while primary containment integrity is required. This modification to Clinton Power Station Technical Specification (TS) Surveillance Requirement 3.6.1.3.3, associated with TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," will provide flexibility to operate the IFTS for the purpose of testing and exercising the system prior to a refueling outage.

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. 107 to NPF-62
2. Safety Evaluation
cc w/encls: See next page
DOCUMENT NAME: G:\CLINTON\CLI95826.AMD

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	LA:PDIII-3		PM:PDIII-3		BC:SCSB		OGC	
NAME	DFoster-Curseen		DPickett		CBerlinger		EAdelen	
DATE	9/26/96		9/24/96		9/27/96		10/1/96	

OFFICIAL RECORD COPY

020039

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

October 3, 1996

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

SUBJECT: ISSUANCE OF AMENDMENT NO. 107 TO FACILITY OPERATING LICENSE NO. NPF-62 - CLINTON POWER STATION, UNIT 1 (TAC NO. M95826)

Dear Mr. Phares:

The U. S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 107 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. The amendment is in response to your application dated June 28, 1996 (U-602587) and as supplemented by letter dated September 17, 1996 (U-602628).

The amendment will permit removal of the Inclined Fuel Transfer System (IFTS) primary containment blind flange while primary containment integrity is required. This modification to Clinton Power Station Technical Specification (TS) Surveillance Requirement 3.6.1.3.3, associated with TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," will provide flexibility to operate the IFTS for the purpose of testing and exercising the system prior to a refueling outage.

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,

Douglas V Pickett

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. 107 to NPF-62
2. Safety Evaluation

cc w/encls: See next page

cc:

Mr. Wilfred Connell
Vice President
Clinton Power Station
Post Office Box 678
Clinton, Illinois 61727

Mr. Daniel P. Thompson
Manager Nuclear Station
Engineering Department
Clinton Power Station
Post Office Box 678
Clinton, Illinois 61727

Resident Inspector
U.S. Nuclear Regulatory Commission
RR#3, Box 229 A
Clinton, Illinois 61727

Mr. R. T. Hill
Licensing Services Manager
General Electric Company
175 Curtner Avenue, M/C 481
San Jose, California 95125

Regional Administrator, Region III
U.S. Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60532-4351

Chairman of DeWitt County
c/o County Clerk's Office
DeWitt County Courthouse
Clinton, Illinois 61727

Mr. J. W. Blattner
Project Manager
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603

Illinois Department
of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

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. 107
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 June 28, 1996, and supplemented by letter dated September 17, 1996, 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. 107 , 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: October 3, 1996

ATTACHMENT TO LICENSE AMENDMENT NO. 107

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
3.6-16	3.6-16
3.6-17	3.6-17
3.6-18	3.6-18
3.6-19	3.6-19
--	3.6-19a
--	3.6-19b

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.2	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located outside primary containment, drywell, and steam tunnel and is required to be closed during accident conditions is closed.	31 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.3	----------NOTES---------- 1. Valves and blind flanges in high radiation areas may be verified by use of administrative means. 2. Not required to be met for PCIVs that are open under administrative controls. 3. Not required to be met for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water level is maintained $\geq$ el. 753 ft. and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls. ---------- Verify each primary containment isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel and is required to be closed during accident conditions is closed.	Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.4	Verify the isolation time of each power operated and each automatic PCIV, except MSIVs, is within limits.	In accordance with the Inservice Testing Program
SR 3.6.1.3.5	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Perform leakage rate testing for each primary containment purge valve with resilient seals.	Once within 92 days after opening the valve AND In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.6	Verify the isolation time of each MSIV is $\geq$ 3 seconds and $\leq$ 5 seconds.	In accordance with the Inservice Testing Program
SR 3.6.1.3.7	Verify each automatic PCIV actuates to the isolation position on an actual or simulated isolation signal.	18 months

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.8	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify the combined leakage rate for all secondary containment bypass leakage paths is ≤ 0.08 L_a when pressurized to $\geq P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.9	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify leakage rate through each main steam line is $\leq$ 28 scfh when tested at $\geq P_a$.	In accordance with the Primary Containment Leakage Rate Testing Program
SR 3.6.1.3.10	----------NOTE---------- Only required to be met in MODES 1, 2, and 3. ---------- Verify combined leakage rate through hydrostatically tested lines that penetrated the primary containment is within limits.	In accordance with the Primary Containment Leakage Rate Testing Program

(continued)

SURVEILLANCE REQUIREMENTS (continued)

SURVEILLANCE		FREQUENCY
SR 3.6.1.3.11	Verify each instrumentation line excess flow check primary containment isolation valve actuates within the required range.	18 months

This page intentionally left blank.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 107 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 28, 1996, and as supplemented by letter dated September 17, 1996, Illinois Power Company, the licensee, requested a revision to Facility Operating License No. NPF-62 for the Clinton Power Station. The proposed amendment would permit removal of the Inclined Fuel Transfer System (IFTS) primary containment blind flange while primary containment integrity is required. This modification to the Clinton Power Station Technical Specification (TS) Surveillance Requirement 3.6.1.3.3, associated with TS 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)," will provide flexibility to operate the IFTS for the purpose of testing and exercising the system prior to a refueling outage.

2.0 BACKGROUND

The Mark III containment design of the Clinton Power Station includes an upper pool in the containment building. The spent fuel pool is physically located at a lower elevation in the adjacent Fuel Building. During refueling outages, an inclined fuel transfer system (IFTS) is used to transfer fuel, control rods, defective fuel storage containers and other small items between the upper containment pool and the spent fuel pool. The IFTS includes a 23-inch ID stainless steel transfer tube enclosing a carriage that is used for transport. The IFTS is a fixed installation, consisting of the inclined fuel transfer tube, upper and lower upenders, valves at both ends of the fuel transfer tube, a carriage equipped with a calibrated positioning system, an electrically powered winch, a primary containment isolation assembly, and supporting instrumentation.

The IFTS penetrates primary containment and connects the containment and fuel building. The top end of the IFTS is located at the bottom of the containment building fuel transfer pool and is normally sealed by a 24-inch flap valve. Located just inside of the containment liner is a containment isolation assembly consisting of a manual gate valve, containment bellows, and a primary containment blind flange. The blind flange is installed during operating modes 1, 2, and 3 when containment integrity is required to be maintained. The blind flange establishes containment isolation and prevents movement of the carriage between containment and the fuel building. The bottom end of the

IFTS is fitted with a 24-inch gate valve and is located approximately 25 feet below the surface of the fuel building fuel transfer pool.

The IFTS is a complex system that remains idle during normal plant operation and is only used to support refueling activities. Once the plant is shutdown and containment integrity is no longer required, the licensee is allowed to loosen the containment bellows and remove the primary containment blind flange. System operation (from the top) is initiated by the upper pool upender in the containment building fuel transfer pool tilting the fuel to align with the fuel transfer tube. The 24-inch flap valve is opened and the fuel travels on the carriage within the transfer tube. After the carriage travels almost the entire length of the transfer tube, it stops within two feet of the bottom gate valve. At this point, the upper 24-inch flap valve is closed and the transfer tube is drained of water by opening both a 4-inch vent line (which opens to the containment atmosphere) and a separate 4-inch drain line that leads to the fuel pool cooling and cleanup system surge tank. The drain line has both a motor-operated and manual isolation valve in series. When the transfer tube is drained, the remaining head of water in the tube is equal to the height of water in the fuel building fuel transfer pool. The lower 24-inch gate valve is then opened allowing the carriage to travel to the lower pool upender where the fuel is uprighted for long-term storage. System operation initiating from the bottom is similar except that once the carriage enters the transfer pool and the bottom 24-inch gate valve is closed, a fill valve and the vent valve are opened to flood the transfer tube.

The IFTS system is maintained in an idle condition for up to 18 months between refueling outages. Due to containment isolation requirements, the licensee is prohibited from removing the blind flange during operating modes 1, 2, and 3 to test and inspect the system. During previous refueling outages, the licensee has experienced significant operational difficulties with the IFTS. This has resulted in IFTS start-up operations becoming "critical path" activities.

The licensee has indicated a desire to inspect and exercise the IFTS prior to operating it in continuous duty during a refueling outage. Therefore, by letter dated June 28, 1996, the licensee proposed a modification to the Clinton Power Station Technical Specifications that would permit them to remove the primary containment blind flange of the IFTS during plant operations in order to make necessary component adjustments and demonstrate system operation. This submittal was supplemented by a September 17, 1996, response to a staff request for additional information. The licensee has proposed inserting a note to Surveillance Requirement 3.6.1.3.3, associated with Technical Specification 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)." The note specifies those conditions when the IFTS blind flange could be removed during operating modes 1, 2, and 3.

3.0 EVALUATION

Surveillance Requirement (SR) 3.6.1.3.3, associated with Technical Specification 3.6.1.3, "Primary Containment Isolation Valves (PCIVs)" states that the licensee shall:

> Verify each primary containment isolation manual valve and blind flange that is located inside primary containment, drywell, or steam tunnel and is required to be closed during accident conditions is closed.

The Frequency of the above SR is "Prior to entering MODE 2 or 3 from MODE 4, if not performed within the previous 92 days."

The licensee has proposed inserting the following note to SR 3.6.1.3.3:

> Not required to be met for the Inclined Fuel Transfer System (IFTS) penetration when the associated primary containment blind flange is removed, provided that the fuel building fuel transfer pool water level is maintained $\geq$ el. 753 ft. and the IFTS transfer tube drain valve(s) remain(s) closed, except that the IFTS tube drain valve(s) may be opened under administrative controls.

The licensee has identified an alternate means to ensure isolation of the IFTS containment penetration in lieu of having the IFTS blind flange in place. This alternate means takes credit for the fact that the IFTS transfer tube terminates deep in the fuel building fuel transfer pool, effectively sealing the tube and precluding it from becoming a potential leak path of the containment atmosphere (into the fuel building) in the event of a design basis accident.

The licensee has identified two scenarios where leakage from a design basis accident would be a concern when the blind flange is removed. The first scenario involves a design basis accident with the fuel transfer tube drained down to the drain line. The peak calculated containment internal pressure for the design basis loss of coolant accident (P_a) is 9.0 psig. Following a postulated accident, containment atmosphere would travel directly through the 4-inch vent pipe to the water level in the fuel transfer tube. As previously stated, the water level in the fuel transfer tube would not go below the level of the fuel building fuel transfer pool. The peak calculated containment internal pressure, P_a, is equivalent to a head of water of 21.7 ft. A review of as-built drawings indicate that the normal water level elevation in the fuel building fuel transfer pool is 754'0". Considering that the 24-inch gate valve located at the bottom of the fuel transfer tube is located at elevation 728.9 ft, containment atmosphere would have to displace the equivalent of 25.1 ft (i.e., 754 - 728.9 ft). This exceeds the equivalent head created by the design basis accident by 3.4 ft. The proposed note in SR 3.6.1.3.3 will require a minimum water level elevation of 753 ft which will result in a minimum margin of 2.4 ft of water. Therefore, the staff concurs that

containment atmosphere leakage through the length of the fuel transfer tube is not plausible.

The second scenario described by the licensee is containment atmosphere leakage past the open drain line directly to the fuel pool cooling and cleanup surge tank. As previously described, the two valves in this 4-inch drain line must be opened to drain the fuel transfer tube before opening the bottom 24-inch gate valve. If a design basis loss of coolant accident occurs with these drain valves open, containment atmosphere could go directly through the 4-inch vent pipe, down the fuel transfer tube, down the drain line, to the surge tank. As described in the proposed note to SR 3.6.1.3.3, the drain valves will only be opened under administrative controls. The licensee's letter of September 17, 1996, describes the proposed administrative controls. A description of the administrative controls is also included in a proposed revision to the technical specification bases included in this letter. The individual at the IFTS controls in the fuel building, who is in continuous communication with the control room, will be responsible for remotely closing the automatic drain valve (1F42-F003) from the IFTS controls. The individual will then leave this station and locally close the associated manual valve (1F42-F301) using the gear operator mounted on top of the valve. In this way, the penetration can be rapidly isolated. In addition, the time that the drain valve would be open will be minimized.

The staff is familiar with past problems that the licensee has experienced with the IFTS. According to the licensee's submittal, a satisfactory check of the entire IFTS, including any subsequent adjustment of sensors or system repairs, can take several days. Therefore, the licensee would likely be performing such testing and inspections of the IFTS during the last few weeks prior to a planned refueling outage. The staff considers the licensee's justification to be reasonable. In response to a staff question, the licensee's letter of September 17, 1996, stated that "since potential air leakage pathways are either water sealed or can be rapidly isolated, a release to the Fuel Building atmosphere that could affect the ability of personnel to perform other safety functions associated with mitigating a postulated LOCA, or prevent them from maintaining the plant in a safe condition during or following a LOCA, would not be expected." The staff further notes that even if containment atmosphere enters the fuel building, it would be contained within the boundaries of the secondary containment and filtered by the Standby Gas Treatment System prior to release to the environment. Therefore, based on the information described above, the staff finds the license's proposal acceptable.

4.0 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.

5.0 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 or changes a surveillance requirement. 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 (61 FR 40021). 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.

6.0 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 Contributors: Douglas V. Pickett
Richard M. Lobel

Date: October 3, 1996