

January 20, 1999

Distribution w/encls:

Mr. Joseph V. Sipek
Director - Licensing
Clinton Power Station
P.O. Box 678
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Docket File
PUBLIC
PDIII-2 r/f
ACRS
GGrant, RIII
TLH3, SE only

GHill (2)
EGA1
WBeckner
OGC
JLazevnick

SUBJECT: ISSUANCE OF AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE
NO. NPF-62 - CLINTON POWER STATION, UNIT 1 (TAC NO. MA3445)

Dear Mr. Sipek:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 119 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit 1. The amendment is in response to your application dated August 24, 1998, as supplemented November 20, 1998.

The amendment approves operator action for meeting the "ready-to-load" requirement for the Division 3 diesel generator.

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:
Jon B. Hopkins, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

1/1

Docket No. 50-461

Dfo1

- Enclosures: 1. Amendment No. 119 to NPF-62
2. Safety Evaluation

cc w/encls: See next page

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NAME	EBarnhill <i>EB</i>		JHopkins <i>JH</i>			SRichards <i>SR</i>	
DATE	12/30/98		12/30/98		1/17/99	1/19/98	

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NAME	EBarnhill <i>EB</i>		JHopkins <i>JH</i>			SRichards <i>SR</i>	
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

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Jon B. Hopkins, Senior Project Manager
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Docket No. 50-461

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Clinton Power Station, Unit 1
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

ILLINOIS POWER COMPANY

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT 1

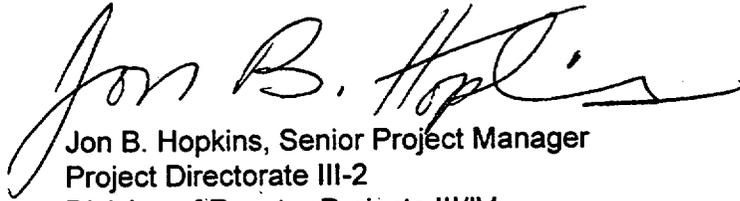
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 119
License No. NPF-62

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Illinois Power Company (the licensee), dated August 24, 1998, as supplemented November 20, 1998, 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, by Amendment No. 119, the license is amended to authorize revision of the Updated Safety Analysis Report (USAR) as set forth in the application for amendment by Illinois Power dated August 24, 1998, as supplemented by letter dated November 20, 1998. Illinois Power shall update the USAR to reflect the revised description authorized by this amendment in accordance with 10 CFR 50.71(e).

3. This license amendment is effective as of its date of issuance and shall be implemented within 45 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read "Jon B. Hopkins", written in a cursive style.

Jon B. Hopkins, Senior Project Manager
Project Directorate III-2
Division of Reactor Projects III/IV
Office of Nuclear Reactor Regulation

Date of Issuance: January 20, 1999



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 119 TO FACILITY OPERATING LICENSE NO. NPF-62

ILLINOIS POWER COMPANY

CLINTON POWER STATION, UNIT 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter dated August 24, 1998, Illinois Power (the licensee) proposed a change to clarify that operator action, in lieu of an automatic design feature, is required to reset the governor for the Division 3 diesel generator (DG) to establish ready-to-load operation should an accident signal occur during DG testing while parallel to the offsite grid at the Clinton Power Station (CPS). The licensee provided a new paragraph to be added to the CPS Updated Safety Analysis Report (USAR) regarding the change. The CPS Technical Specification (TS) Bases will also be changed to reflect the operator action.

Following a telephone discussion with the staff, the licensee in a letter dated November 20, 1998, provided additional information including a revised proposed TS Bases discussion and a revised USAR discussion. This letter did not change the requested action or affect the NRC staff's finding of proposed no significant hazards consideration determination (63 FR 48529).

2.0 BACKGROUND

Surveillance Requirement (SR) 3.8.1.17 in Section 3.8.1 of the TS requires, with the Division 3 DG operating in the test mode, verification that an actual or simulated emergency core cooling system (ECCS) initiation signal automatically overrides the test mode and returns the DG to ready-to-load operation. On June 26, 1998, the licensee determined that this surveillance requirement was not being adequately satisfied for the Division 3 DG since the Clinton design (for Division 3 DG only) requires operator action, in lieu of an automatic design feature, to establish ready-to-load operation should an ECCS signal occur during DG testing.

The plant's TS Bases pertaining to SR 3.8.1.17 states that an automatic switchover design is required by paragraph 6.2.6(2) of IEEE Std. 308-1980, "IEEE Standard Criteria for Class 1E Power Systems for Nuclear Power Generating Stations" (endorsed by Regulatory

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Guide 1.32, "Criteria for Safety-Related Electric Power Systems for Nuclear Power Plants"). During the NRC's Special Evaluation of the Clinton Power Station conducted during the fall of 1997, the NRC team discussed with the licensee a concern associated with this requirement. Specifically, the team observed that the Division 3 DG was operated in the droop mode during testing when parallel to the offsite power system and manual action would be required to restore the DG to isochronous operation (droop=0) for an ECCS demand. Licensee Event Report (LER) 96-012 stated that the DG was inoperable in this condition during testing because, without manual restoration, the resulting frequency of the DG output would not be sufficient for the high pressure core spray (HPCS) pump to produce required flow should a loss-of-offsite power with a loss-of-coolant accident (LOOP/LOCA) occur. The NRC team determined that this aspect of the Clinton Division 3 DG design was contrary to Regulatory Guide 1.108, "Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants," and Regulatory Guide 1.9, "Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants," (which endorses IEEE Std 387, "IEEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations") which require automatic restoration from the test mode for an accident demand as does IEEE Std 308-1980. Also, it appeared that the licensee implied, during original plant licensing reviews, that the plant's design for the emergency DG's (including the Division 3 DG) provided this feature and was in compliance with the regulatory guides. In response to the evaluation team's concern, the licensee opened a condition report to address this issue.

As a result, the licensee proposed a change to the USAR and the TS Bases discussion related to SR 3.8.1.17 to eliminate the conflict between the surveillance requirement and the actual design of Division 3 DG control circuitry. Because of the concern over the Division 3 DG design's apparent deviation from staff guidance and historical position contained in the regulatory guides and IEEE standards mentioned above, the NRC staff questioned the licensee's approach and supporting documentation for the proposed change. As a result, the staff (during an October 1, 1998, conference call) requested the licensee to provide additional supporting information which was provided in the supplemental letter.

3.0 EVALUATION

The licensee's proposed change to the TS Bases follows:

1. On Page B 3.8.13 following the first two paragraphs under Surveillance Requirements add:

In general, surveillances performed for each of the required DGs are similar, with one notable difference due to the fact that the Division 3 DG utilizes a mechanical governor, while the Division 1 and 2 DGs utilize an electronic governor. As such, the Division 1 and 2 DGs are capable of operating in both an isochronous mode as well as a "droop" mode for when the DGs are paralleled to the offsite source during testing. The Division 3 DG, on the other hand, is capable of operating only in the droop mode (though a droop setting of zero can be utilized). This difference may affect the Division 3 DG's capability to achieve rated frequency

following automatic switchover from the test mode to ready-to-load operation upon receipt of a LOCA initiation signal (as verified per SR 3.8.1.17).

For the Division 1 and 2 DGs, DG operation is returned to the isochronous mode upon switchover such that rated speed/frequency is automatically attained. For the Division 3 DG, however, with the DG governor initially operating in the droop condition during the test mode, operator action may be required to reset the governor for ready-to-load operation at the required frequency. This difference is acknowledged in the Bases for SR 3.8.1.17 to address compliance with that SR. Notwithstanding, the condition also requires the Division 3 DG to be considered inoperable if it cannot be ensured that the required frequency would be attained in the event of a LOCA and a loss of offsite power concurrent with the Division 3 DG being operated or tested with the existing droop setting in effect. Thus, the Division 3 DG is generally considered inoperable while the droop setting is in effect during performance of SRs that require the DG to be paralleled to the offsite source.

2. On Page B 3.8-27 revise the first paragraph under SR 3.8.1.17 as follows with the change shown in italics:

Demonstration of the test mode override ensures that the DG availability under accident conditions is not compromised as a result of testing. *Except as clarified below for the Division 3 DG, interlocks to the LOCA sensing circuits cause the DG to automatically reset to ready-to-load operation if an ECCS initiation signal is received during operation in the test mode. Ready-to-load operation is defined as the DG running at rated speed and voltage with the DG output breaker open. These provisions for automatic switchover are required by IEEE-308 (Ref. 13), paragraph 6.2.6(2), as further amplified by IEEE 387, sections 5.6.1 and 5.6.2. (Clarification regarding conformance of the Division 3 DG design to these standards is provided in the USAR, Chapter 8 (Reference 2).)*

3. Add the following as a new second paragraph to the Bases discussion for SR 3.8.1.17:

Automatic switchover from the test mode to ready-to-load operation for the Division 3 DG is also demonstrated, as described above, by ensuring that DG control logic automatically resets in response to a LOCA signal during the test mode and confirming that ready-to-load operation is attained (as evidenced by the DG running with the output breaker open). However, with the DG governor initially operating in a "droop" condition during the test mode, operator action may be required to reset the governor for ready-to-load operation in order to complete the surveillance for the Division 3 DG. Resetting the governor ensures that the DG will supply the Division 3 bus at the required frequency in the event of a

LOCA and a loss of offsite power while the DG is in a droop condition during the test mode.

The staff's view of the key points in the information provided by the licensee is summarized as follows:

1. As stated above, the safety concern is that the Division 3 DG requires manual restoration from the droop mode during testing before it can provide power at an adequate frequency to meet the HPCS flow requirements for an accident demand. To assess the risk associated with this concern, the licensee made the following conservative assumptions/estimations:
 - The reduction in HPCS flow due to the droop setting not being restored to zero is only a problem for medium and large break LOCAs which have an estimated probability of occurrence of $9.05E-5$ /year.
 - The concern is only related to events involving a LOCA with a LOOP. The licensee estimated the conditional probability of a LOOP occurring concurrent with a LOCA to be $6.0E-2$.
 - The surveillances that require the DG to be operated parallel to the grid are the monthly 1-hour load test and the 18-month 24-hour load test. The licensee conservatively estimated the fraction of time per year that the DG would be operated during those tests in a droop mode that represented a vulnerability/risk in that adequate frequency would not be provided for an accident demand without reliance upon operator action. That estimate was $2.74E-3$.

The licensee multiplied the above three numbers to obtain an overall probability for the event of $1.5E-8$ /year which does not represent a significant risk.
2. During testing of the DG in parallel with the offsite grid, an operator is typically nearby and can perform the simple operator action locally to restore the DG to zero droop operation should an accident demand occur. Also the operator in the main control room can take action to overcome the droop setting if required.
3. The licensee stated that the Division 3 DG is considered inoperable when the droop setting is not equal to zero and that its removal from service for testing is controlled and limited by the plant's Technical Specifications.

Based on the above, the staff finds the proposed changes to the Technical Specification Bases acceptable. Revisions to the TS Bases are made by the licensee and provided to the NRC staff in accordance with TS 5.5.11, "Technical Specification (TS) Bases Control Program."

Along with the above proposed TS Bases changes, the licensee submitted revisions to various sections of the USAR to clarify the plant's compliance with Regulatory Guides 1.9, 1.32, and 1.108 and IEEE Std 387 as pertaining to the Division 3 DG's restoration to the ready-to-load operation from the test mode. The NRC staff also finds the revisions to the USAR to be

acceptable based on the evaluation presented above. The USAR shall be updated in accordance with 10 CFR 50.71(e).

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 (63 FR 48529). 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 Contributor: F. Burrows

Date: January 20, 1999