

November 1, 1990

Docket No. 50-461

Mr. Frank A. Spangenberg
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Dear Mr. Spangenberg:

SUBJECT: AMENDMENT NO. 52 TO FACILITY OPERATING LICENSE NO. NPF-62
(TAC NO. 75852)

The Commission has issued the enclosed Amendment No. 52 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. This amendment is in response to your application dated November 20, 1989.

This amendment revises the Technical Specifications to extend the allowed outage time for an inoperative automatic Self Test System (STS) in plant operating modes 4 and 5 and to use the STS in manual mode when its automatic mode is inoperative with an increased Surveillance Test Interval for the STS in manual test mode.

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

John B. Hickman, Project Manager
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

- Amendment No. 52 to License No. NPF-62
- Safety Evaluation

cc w/enclosures:
See next page

DOCUMENT NAME: 75852 AMD CLINTON

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

ILLINOIS POWER COMPANY, ET AL.

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 52
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 November 20, 1989 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:

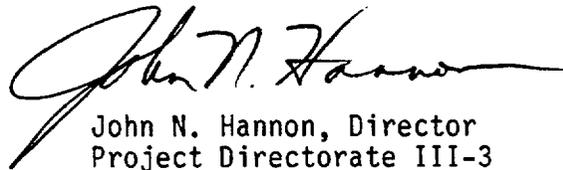
*Illinois Power Company is authorized to act as agent for Soyland Power Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

(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. 52 , 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



John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: November 1, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 52

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. Overleaf pages are provided to maintain document completeness.

Remove

3/4 3-103

B 3/4 3-9

Insert

3/4 3-103

B 3/4 3-9

INSTRUMENTATION

3/4.3.10 NUCLEAR SYSTEM PROTECTION SYSTEM - SELF TEST SYSTEM

LIMITING CONDITION FOR OPERATION

3.3.10 The SELF TEST SYSTEM (STS) of the Nuclear System Protection System shall be OPERABLE and operating in the fully automatic mode.*

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, 4, and 5.

ACTION:

a. With the STS not operating in the fully automatic mode, initiate action within 24 hours to restore the STS to automatic operation for the maximum number of divisions available, and

1. In OPERATIONAL CONDITION 1, 2 or 3:

a) Restore the STS to fully automatic operation within 30 days, or

b) Within the next 24 hours and at least once per 7 days thereafter, operate the STS manually to perform all required tests not being performed in the automatic mode until the STS is restored to fully automatic operation,

Otherwise, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours;

2. In OPERATIONAL CONDITION 4 or 5:

a) Restore the STS to fully automatic operation within 90 days, or

b) Within the next 24 hours and at least once per 90 days thereafter, operate the STS manually to perform all required tests not being performed in the automatic mode until the STS is restored to fully automatic operation,

Otherwise, suspend CORE ALTERATIONS and all operations with a potential for draining the reactor vessel, verify all insertable control rods to be fully inserted and lock the reactor mode switch in the Shutdown position within one hour.

b. The provisions of Specification 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS:

4.3.10 Status indications of the STS shall be obtained at least once per 24 hours, whenever the STS is operating in the fully or partially automatic mode.

*The STS may be periodically taken out of the fully automatic mode of operation for up to 4 hours for the purpose of performing surveillance testing and preventative or corrective maintenance to satisfy technical specification requirements for those components the STS is designed to monitor.

INSTRUMENTATION

BASES

3/4.3.9 PLANT SYSTEMS ACTUATION INSTRUMENTATION (Continued)

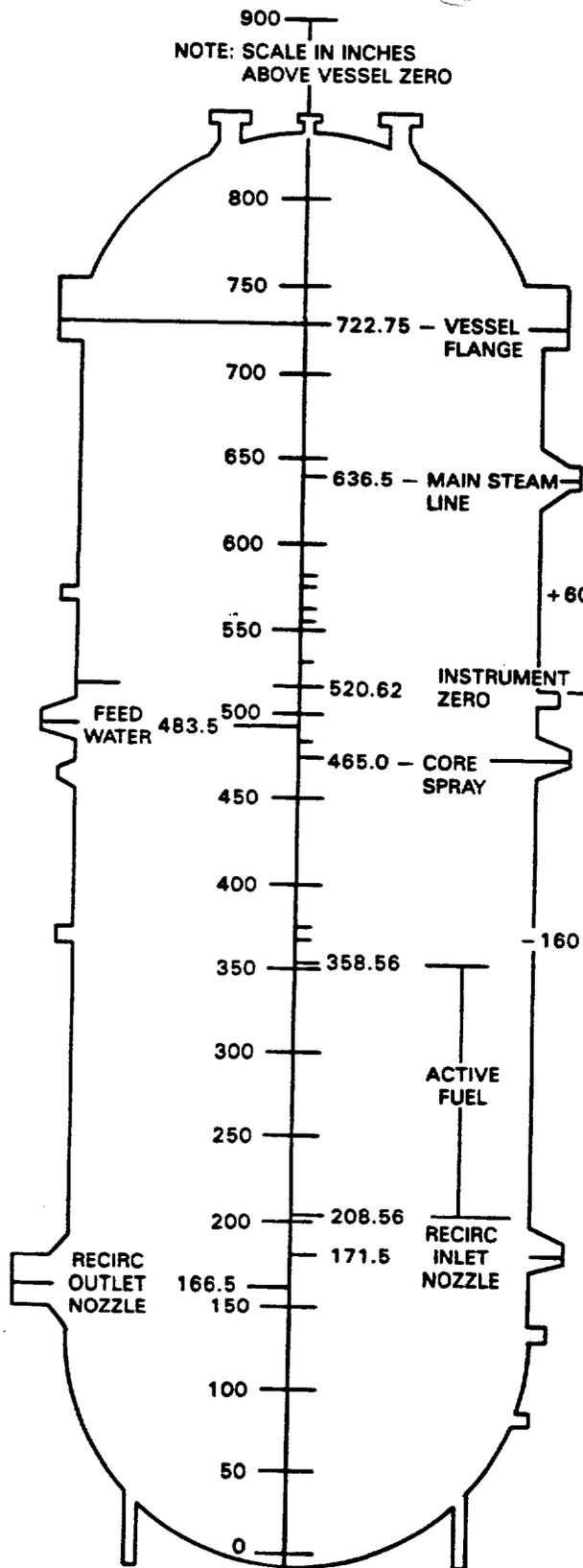
fluctuations are accounted for in the trip setpoints and allowable values specified for drywell and containment pressure-high. A 10-minute minimum, 13-minute maximum time delay exists between initiation of LPCI and containment spray actuation. A high reactor water level, level 8, signal will actuate the feed-water system/main turbine trip system. The suppression pool makeup system is automatically initiated on a low low suppression pool water level signal with a concurrent LOCA signal or following a specified time delay after receipt of a LOCA signal.

3/4.3.10 NUCLEAR SYSTEM PROTECTION SYSTEM - SELF TEST SYSTEM

This specification provides the limiting conditions for operation necessary to preserve the STS's ability to perform its intended function of detecting and determining the location of a fault in the functional NSPS.

The Self Test System (STS) is an overlay testing and surveillance subsystem which provides the capability to continuously and automatically perform testing of all active circuitry within the NSPS panels, essential to the safe shutdown of the reactor. The primary purpose of the STS is to enhance the availability of the NSPS by optimizing the time to detect and determine the location of a failure in the functional system. Each of the four NSPS cabinets, with one cabinet associated with each of the four Class 1E powered NSPS divisions, contains its own controller (STC). The STS will be used for post-maintenance testing and to augment conventional testing methods which include CHANNEL CHECKS, CHANNEL FUNCTIONAL TESTS, CHANNEL CALIBRATIONS, RESPONSE TIME TESTS and LOGIC SYSTEM FUNCTIONAL TESTS.

Under the provision of the ACTION statement, with the STS inoperable or not operating in the fully automatic mode of operation, 30 days is allowed to restore the STS to fully automatic operation during OPERATIONAL CONDITIONS 1, 2, 3; 90 days is allowed during OPERATIONAL CONDITIONS 4, 5. Additionally, the ACTION includes an allowance for manually operating the STS to perform testing equivalent to that which is normally performed during automatic operation if the STS cannot be restored to fully automatic operation within the required time limits. Manual STS testing is required to be performed at least once per 7 days during OPERATIONAL CONDITIONS 1, 2, 3 and at least once per 90 days during OPERATIONAL CONDITIONS 4, 5. These frequencies and the above allowed out-of-service times have been shown by analysis to be acceptable for supporting adequate overall availability of the NSPS. Maintaining the STS in a partially automatic mode as much as possible (whenever it is not operating in the fully automatic mode) provides further enhancement of the NSPS availability.



WATER LEVEL NOMENCLATURE

NO.	HEIGHT ABOVE VESSEL ZERO (in.)	READING
(8)	572.62	+ 52.0
(7)	559.42	+ 38.8
(4)	551.42	+ 30.8
(3)	529.52	+ 8.9
(2)	475.12	- 45.5
(1)	375.12	- 145.5

+ 80 (8) + 52.0 HPCS

+ 80 (8) + 52.0 RPS INITIATES, RCIC TRIPS
 (7) + 38.8 HIGH LEVEL ALARM
 (4) + 30.8 LOW LEVEL ALARM
 (3) + 8.9 REACTOR SCRAM
 CONTRIBUTE TO ADS

0 (2) - 45.5 INITIATE RCIC HPCS, TRIP RECIRC PUMPS, CLOSE PRIMARY SYSTEM ISO VLV EXCEPT RHR SHUTDOWN ISO VLV AND MSIVs

- 160 (1) - 145.5 INITIATE RHR, CS START DIESEL CONTRIBUTE TO ADS, CLOSE MSIVs

Bases Figure B 3/4.3-1 Reactor Vessel Water Level



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 52 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 November 20, 1989, Illinois Power (IP) proposed changes to Clinton Power Station Technical Specifications. The change is to increase Allowed Outage Time (AOT) and Surveillance Test Interval (STI) of the Self Test System (STS) provided in the Clinton design to automatically test Nuclear System Protection System (NSPS) logic. The change also proposed to use STS in the manual mode when the automatic mode of STS is found inoperable.

The STS is designed to perform automatic surveillance testing of NSPS circuitry which includes logics associated with the Reactor Protection System (RPS), Emergency Core Cooling System (ECCS), and Containment and Reactor Vessel Isolation Control System. The STS injects short-duration test signal pulses in the NSPS Logic to verify proper response of the logic to various input combinations. When in automatic mode, the STS injects test pulses in the logic at one-hour STI. The STS normally operates to automatically test all four NSPS divisions in a continuous, cyclic manner. The STS ceases to operate in automatic mode if failure is detected in any one of the four divisional logics. The STS test sequence can be manually restored to automatic operation for the remaining three divisions. Once the failure is corrected, the STS can then be restored to fully automatic operation for all four divisions.

The primary purpose of the STS is to improve the availability of the Safety Systems Instrumentation by minimizing the time to detect and determine the failure location. The current Technical Specification limiting condition for operation (LCO) requires the STS operability in fully automatic mode in plant operating modes 1 thru 5. If an inoperable STS is not restored to fully automatic operation within 30 days, the plant is required to shut down within the next 12 hours. The testing capability of the STS in manual mode is not utilized in the current Technical Specifications.

The proposed change calls for a 90 days AOT for the restoration of an inoperable STS to fully automatic operation during plant operating modes 4 and 5. If the inoperable STS cannot be restored to fully automatic operation within the AOT (30 days for plant operating modes 1, 2, and 3 and 90 days for modes 4 and 5), the STS will be switched to manual mode.

The manual STS testing will be performed at least once per 7 days during plant operating modes 1, 2, 3 and at least once per 90 days during modes 4 and 5. If the inoperable STS is not restored to fully automatic operation within the AOT or the manual testing cannot be performed as required in modes 1, 2, 3, the operation mode will be changed in accordance with the current LCO. However, for similar conditions in modes 4 and 5, the proposed change requires suspending core alteration and all operations with a potential for draining the reactor vessel, verifying all insertable control rods to be fully inserted, and locking the reactor mode switch in the shutdown position within one hour.

2.0 EVALUATION

The current LCO for STS does not address two concerns: (1) what action should be taken when the LCO cannot be met during shutdown/refueling modes, and (2) why the STS should not be used in manual mode when its automatic mode is not restored within the specified AOT. The Clinton STS is designed with the capability to perform testing in manual mode comparable in degree with its automatic mode of operation.

The current LCO action only addresses the condition in which the STS is not operating in the fully automatic mode during power operation. Also the current AOT for STS restoration to fully automatic operation during shutdown/refueling modes is no different than that for the plant operating modes. Based on the number of demands on the safety systems during modes 1, 2, and 3 versus modes 4 and 5, a longer AOT for restoring STS to fully automatic operation should be permitted for modes 4 and 5 relative to that established for modes 1, 2, and 3.

Regarding the second concern, the current LCO requires plant shutdown if the STS is not restored to fully automatic operation within the specified AOT. A provision for manually controlling the STS should be included in the LCO to avoid unnecessary plant shutdown. Also the safety system instrumentation logic circuits testing by STS in manual mode is comparable in accuracy to the manual testing of the relay logic circuits at the plants which do not have STS.

The proposed AOT extension for an inoperative automatic STS in modes 4 and 5 and the proposed STI extension for the STS in manual mode, are based on the analysis in BWR Owners group response (1985 GE document NEDC-30844 and Technical Specification improvement analysis in the 1985 GE document NEDC-30851) to the NRC Generic Letter 83-28. The licensee's comparison of the analysis results indicates no significant effect on the overall average Reactor Protection System (RPS) failure frequency (unavailability) within the 7-day STI for the manual operation of the STS in operating modes 1, 2 and 3. Similarly, the RPS unavailability was evaluated for an inoperative automatic STS AOT of 3 months and its manual mode STI of 3 months in plant operating modes 4 and 5. The licensee found the calculated RPS unavailability for 3-months AOT and 3-months STI of the STS to be comparable with

the RPS unavailability of relay plants. Based on comparison of the analysis results with those of the relay plant values, the licensee concluded that the proposed action to use STS in manual mode instead of initiating plant shutdown and the proposed AOT and STIs are acceptable.

The licensee has proposed an additional action for an unlikely condition in modes 4 and 5 when the STS cannot be restored to fully automatic mode and also cannot be switched to the manual mode. The action involves suspending core alteration and operations with a potential for draining the reactor vessel, verifying all insertable control rods to fully inserted, and locking the mode switch in the shutdown position. This proposed action will place the plant in a condition which minimizes possible challenges to the safety systems, especially the RPS. All three proposed actions are conservative and enhance plant safety.

Based on the above evaluation, the staff concludes that the proposed changes to the Technical Specification do not involve an unreviewed safety question. The proposed changes only affect operation of the STS, involve no change to the plant safety system design, do not directly affect operation of the associated safety systems, and are acceptable.

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 or a change to a surveillance requirement. 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: I. Ahmed, NRR

Dated: November 1, 1990