

September 27, 1988

Docket No.: 50-461

Mr. Dale L. Holtzscher
Manager - Licensing and Safety
Clinton Power Station
P. O. Box 678
Mail Code V920
Clinton, Illinois 61727

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EButcher
ACRS(10)
GPA/PA
ARM/LFMB
OGC
BGrimes

Dear Mr. Holtzscher:

SUBJECT: TECHNICAL SPECIFICATION CHANGE REQUEST FOR TESTING HYDROGEN WATER
CHEMISTRY (TAC 68247)

Re: CLINTON POWER STATION, UNIT NO. 1

The Commission has issued the enclosed Amendment No. 11 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit No. 1. This amendment consists of changes to the Technical Specifications (TSs) in response to your application dated May 18, 1988, as supplemented on June 2, 1988.

This amendment revises the Technical Specification Tables 2.2.1-1 and 3.3.2-2 concerning the main steam line radiation - high full power background radiation levels and associated trip setpoints.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be provided in the Federal Register.

Sincerely,

151

Janice A. Stevens, Project Manager
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:

1. Amendment No. to License No. NPF-62
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

PDIII-2
LLuther:km
9/20/88

PDIII-2 *gas*
JStevens
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OGC *APH*
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DFol
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m.w.

September 27, 1988

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Mr. Dale L. Holtzscher
Acting Manager - Licensing and Safety
Clinton Power Station
Post Office Box 678
Mail Code V920
Clinton, Illinois 61727

DISTRIBUTION
Docket file
NRC & Local PDRs
JStevens
LLuther
DMuller
GHolahan
DCrutchfield

Dear Mr. Holtzscher:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT -
TECHNICAL SPECIFICATION CHANGE REQUEST FOR TESTING HYDROGEN WATER
CHEMISTRY (TAC NO. 68247)

RE: CLINTON POWER STATION, UNIT NO. 1

Pursuant to 10 CFR 51.119, the Commission has requested the Office of the Federal Register to publish the enclosed "Environmental Assessment and Finding of No Significant Impact." This notice is in regard to your request dated May 18, 1988, as supplemented on June 2, 1988, for changes to the Technical Specifications (TSs) concerning radiation levels and associated trip setpoints.

15/

Janice A. Stevens, Project Manager
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

cc: w/enclosure:
See next page

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9/20/88

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DMuller *DM*
9/13/88

OGC *APH* - see corrections
9/14/88 of typos in the
EIA *APH*
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

September 29, 1988

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Acting Manager - Licensing and Safety
Clinton Power Station
P. O. Box 678
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Clinton, Illinois 61727

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CHEMISTRY (TAC 68247)

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This amendment revises the Technical Specification Tables 2.2.1-1 and 3.3.2-2 concerning the main steam line radiation - high full power background radiation levels and associated trip setpoints.

A copy of our Safety Evaluation is also enclosed. Notice of Issuance will be provided in the Federal Register.

Sincerely,

Janice A. Stevens

Janice A. Stevens, Project Manager
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosures:

1. Amendment No. 11 to License No. NPF-62
2. Safety Evaluation
3. Notice of Issuance

cc w/enclosures:
See next page

**Mr. Frank A. Spangenberg
Illinois Power Company**

**Clinton Power Station
Unit 1**

cc:

**Mr. D. P. Hall
Vice President
Clinton Power Station
P. O. Box 678
Clinton, Illinois, 61727**

**Mr. R. D. Freeman
Manager-Nuclear Station Engineering Dept.
Clinton Power Station
P. O. Box 678
Clinton, Illinois 61727**

**Sheldon Zabel, Esquire
Schiff, Hardin & Waite
7200 Sears Tower
233 Wacker Drive
Chicago, Illinois 60606**

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

**Mr. L. Larson
Project Manager
General Electric Company
175 Curtner Avenue, N/C 395
San Jose, California 95125**

**Regional Administrator, Region III
799 Roosevelt Road, Bldg. #4
Glen Ellyn, Illinois 60137**

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

**Illinois Department
of Nuclear Safety
Division of Engineering
1035 Outer Park Drive, 5th Floor
Springfield, Illinois 62704**

**Mr. Donald Schopfer
Project Manager
Sargent & Lundy Engineers
55 East Monroe Street
Chicago, Illinois 60603**



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. 11
License No. NPF-62

1. The Nuclear Regulatory Commission (the Commission) has found that
 - A. The application for amendment by Illinois Power Company* (IP), Soyland Power Cooperative, Inc., and Western Illinois Power Cooperative, Inc. (the licensees) dated May 18, 1988, as supplemented on June 2, 1988, 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 Western Illinois Power Cooperative, Inc. and has exclusive responsibility and control over the physical construction, operation and maintenance of the facility.

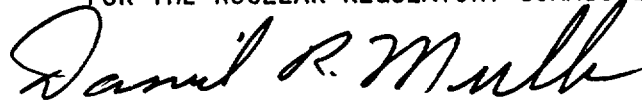
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 11, 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



Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Attachment:
Changes to the Technical
Specifications

Date of Issuance: September 29, 1988

ATTACHMENT TO LICENSE AMENDMENT NO. 11

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.

<u>Remove</u>	<u>Insert</u>
2-3	2-3
2-4	2-4
3/4 3-21	3/4 3-21
3/4 3-24	3/4 3-24

TABLE 2.2.1-1
REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. Intermediate Range Monitor		
a. Neutron Flux-High	$\leq 120/125$ divisions of full scale	$\leq 122/125$ divisions of full scale
b. Inoperative	NA	NA
2. Average Power Range Monitor:		
a. Neutron Flux-High, Setdown	$\leq 15\%$ of RATED THERMAL POWER	$\leq 20\%$ of RATED THERMAL POWER
b. Flow Biased Simulated Thermal Power-High		
1) Flow Biased	$\leq 0.66 (W-\Delta W)+48\%$, (a) with a maximum of $\leq 111.0\%$ of RATED THERMAL POWER	$\leq 0.66 (W-\Delta W)+51\%$, (a) with a maximum of $\leq 113.0\%$ of RATED THERMAL POWER
2) High Flow Clamped		
c. Neutron Flux-High	$\leq 118\%$ of RATED THERMAL POWER	$\leq 120\%$ of RATED THERMAL POWER
d. Inoperative	NA	NA
3. Reactor Vessel Steam Dome Pressure - High	≤ 1065 psig	≤ 1080 psig
4. Reactor Vessel Water Level - Low, Level 3	> 8.9 inches above Instrument zero*	> 8.3 inches above instrument zero
5. Reactor Vessel Water Level-High, Level 8	≤ 52.0 inches above Instrument zero*	≤ 52.6 inches above Instrument zero
6. Main Steam Line Isolation Valve - Closure	$\leq 8\%$ closed	$\leq 12\%$ closed
7. Main Steam Line Radiation - High	≤ 3.0 x full power background**	≤ 3.6 x full power background**
8. Drywell Pressure - High	≤ 1.68 psig	≤ 1.88 psig

CLINTON - UNIT 1

2-3

Amendment No. 11

TABLE 2.2.1-1 (Continued)
REACTOR PROTECTION SYSTEM INSTRUMENTATION SETPOINTS

<u>FUNCTIONAL UNIT</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
9. Scram Discharge Volume Water Level - High		
a. Level Transmitter		
1C11-N601A	≤ 30 in. †	≤ 40 1/4 in.
1C11-N601B	≤ 30 in. †	≤ 40 1/4 in.
1C11-N601C	≤ 30 in. ††	≤ 39 3/16 in.
1C11-N601D	≤ 30 in. ††	≤ 39 3/16 in.
b. Float Switch		
1C11-N013A	≤ 762 ft. 1.375 in. msl	≤ 763 ft. 3 1/4 in. msl
1C11-N013B	≤ 762 ft. 1.125 in. msl	≤ 763 ft. 3 1/4 in. msl
1C11-N013C	≤ 762 ft. 0.75 in. msl	≤ 763 ft. 1 11/16 in. msl
1C11-N013D	≤ 762 ft. 1.125 in. msl	≤ 763 ft. 1 11/16 in. msl
10. Turbine Stop Valve - Closure	≤ 5% closed	≤ 7% closed
11. Turbine Control Valve Fast Closure, Valve Trip System Oil Pressure - Low	> 530 psig NA	> 465 psig NA
12. Reactor Mode Switch Shutdown Position	NA	NA
13. Manual Scram	NA	NA

(a) The Average Power Range Monitor Scram Function varies as a function of recirculation loop drive flow (W). ΔW is the difference in indicated drive flow (in percent of drive flow which produces the same core flow) between two loop and single loop operation at the same core flow. $\Delta W = 0$ for two loop operation. $\Delta W = 8\%$ for single loop operation.

*See Bases Figure B 3/4 3-1.

†Instrument zero is 759 ft. 11 in. msl

††Instrument zero is 759 ft. 10.5 in. msl

**Within 24 hours prior to the planned start of the hydrogen injection test, with reactor power at greater than 20% of RATED THERMAL POWER, the normal full power background radiation level and associated trip setpoints may be changed based on a calculated value of the radiation level expected during the test. The background radiation level and associated trip setpoints may be adjusted during the test based on either calculations or measurements of actual radiation levels resulting from hydrogen injection. The background radiation level shall be verified and the associated trip setpoints shall be returned to their normal value within 24 hours of re-establishing normal radiation levels after completion of the hydrogen injection test at greater than 20% of RATED THERMAL POWER or within 12 hours of establishing reactor power levels below 20% of RATED THERMAL POWER.

TABLE 3.3.2-2 (Continued)
CRVICS INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
1. <u>PRIMARY AND SECONDARY CONTAINMENT ISOLATION (Continued)</u>		
k. Containment Pressure - High	≤ 2.62 psid	≤ 3.00 psid
l. Main Steam Line Radiation - High	≤ 3.0 x full power background [#]	≤ 3.6 x full power background [#]
m. Fuel Building Exhaust Radiation - High	≤ 10 mR/hr	≤ 17 mR/hr
n. Manual Initiation	NA	NA
2. <u>MAIN STEAM LINE ISOLATION</u>		
a. Reactor Vessel Water Level - Low Low Low, Level 1	≥ -145.5 in.*	≥ -147.7 in.
b. Main Steam Line Radiation - High	≤ 3.0 x full power background [#]	≤ 3.6 x full power background [#]
c. Main Steam Line Pressure - Low	≥ 849 psig	≥ 837 psig
d. Main Steam Line Flow - High	≤ 170 psid**	≤ 178 psid**
e. Condenser Vacuum - Low	≥ 8.5 in. Hg vacuum	≥ 7.6 in. Hg vacuum
f. Main Steam Line Tunnel Temp. - High	≤ 165°F	≤ 176°F
g. Main Steam Line Tunnel Δ Temp. - High	≤ 54.5°F	≤ 60°F
h. Main Steam Line Turbine Bldg. Temp. - High		
(1) 1E31 - N559 A, B, C, D	≤ 131.2°F	≤ 138°F
1E31 - N560 A, B, C, D		
1E31 - N561 A, B, C, D		
1E31 - N562 A, B, C, D		
(2) 1E31 - N563 A, B, C, D	≤ 143.2°F	≤ 150°F
i. Manual Initiation	NA	NA
3. <u>REACTOR WATER CLEANUP SYSTEM ISOLATION</u>		
a. Δ Flow - High	≤ 59 gpm	≤ 66.1 gpm
b. Δ Flow Timer	≥ 45 sec.	≤ 47 sec.

TABLE 3.3.2-2 (Continued)
CRVICS INSTRUMENTATION SETPOINTS

<u>TRIP FUNCTION</u>	<u>TRIP SETPOINT</u>	<u>ALLOWABLE VALUE</u>
5. <u>RHR SYSTEM ISOLATION (Continued)</u>		
c. Reactor Vessel Water Level - Low, Level 3	≥ 8.9 in.*	≥ 8.3 in.
d. Reactor Vessel Water Level - Low Low Low, Level 1	≥ -145.5 in.*	≥ -147.7 in.
e. Reactor Vessel (RHR Cut-in Permissive) Pressure - High	≤ 135 psig**	≤ 150 psig**
f. Drywell Pressure - High		
1) Containment Spray	≤ 1.68 psig	≤ 1.88 psig
2) Fuel Pool Cooling	≤ 1.68 psig	≤ 1.88 psig
g. Manual Initiation	NA	NA

*See Bases Figure B 3/4 3-1.

**Initial setpoint. Final setpoint to be determined during startup test program. Any required change to this setpoint shall be submitted to the Commission within 90 days of test completion.

#Within 24 hours prior to the planned start of the hydrogen injection test, with reactor power at greater than 20% of RATED THERMAL POWER, the normal full power background radiation level and associated trip setpoints may be changed based on a calculated value of the radiation level expected during the test. The background radiation level and associated trip setpoints may be adjusted during the test based on either calculations or measurements of actual radiation levels resulting from hydrogen injection. The background radiation level shall be verified and the associated trip setpoints shall be returned to their normal value within 24 hours of re-establishing normal radiation levels after completion of the hydrogen injection test at greater than 20% of RATED THERMAL POWER or within 12 hours of establishing reactor power levels below 20% of RATED THERMAL POWER.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 11 TO FACILITY OPERATING LICENSE NPF-62
ILLINOIS POWER COMPANY
DOCKET NO. 50-461

1.0 INTRODUCTION

By letters dated May 18 and June 2, 1988, the licensee proposed Technical Specification changes for the Clinton Power Station to test the feasibility of a hydrogen water chemistry (HWC) system which will be used to mitigate inter-granular stress corrosion cracking of stainless steel components. The Technical Specification changes will permit a temporary increase in the Clinton main steam line radiation-high scram and isolation setpoints to allow operation with expected higher radiation levels resulting from hydrogen injection into the reactor coolant.

2.0 EVALUATION

2.1 High Main Steam Line Radiation Scram and Isolation Set Points

The Main Steam Line Radiation Monitors (MSLRMs) provide reactor scram as well as reactor vessel and primary containment isolation signals upon detection of high activity levels in the main steam lines. Additionally, these monitors serve to limit radioactivity released in the event of fuel failures. The proposed Technical Specification changes to Tables 2.2.1-1 and 3.3.2-2 would allow adjustments to the normal background radiation level and associated trip set points for the MSLRMs at reactor power levels greater than 20% of rated thermal power. The adjustments will be based on either calculations or measurements of actual radiation levels resulting from increased N-16 levels in the main steam lines due to hydrogen injection. The background radiation level shall be verified and the associated trip set points shall be returned to their normal value within 24 hours of re-establishing normal radiation levels after completion of the hydrogen injection test at greater than 20% of rated thermal power or within 12 hours of establishing reactor power levels below 20% of rated thermal power.

The licensees state that the only design basis accident which takes credit for the Main Steam Line Radiation - High trip is the control rod drop accident (CRDA). Generic analysis of the consequences of the CRDA are increasingly less severe above 10 percent power due to a faster doppler

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response and a lower rod worth. Above 20 percent power, the consequences of the CRDA are minimal. Since hydrogen injection will be limited to above 20 percent of rated power and the increased MSLRM trip setpoint will be reduced to normal levels below this power level, the staff concludes that the currently approved CRDA analysis for the Clinton Power Station is appropriately bounded and remains valid. Therefore, the proposed Technical Specification changes are acceptable.

2.2 Radiation Protection

The staff has reviewed the proposed Technical Specification changes to assure that the licensees have considered the radiological implications of dose rate increases associated with N-16 activity increases due to hydrogen injections into the reactor system. Radiation surveys will be conducted at regular intervals during the test to determine radiation levels in and around the facility as well as at the site boundary. Additionally, the licensees have stated that data will be obtained for shielding design should additional shielding be necessary for a permanent hydrogen water chemistry installation.

Radiation protection measures will be implemented to maintain doses to plant personnel as low as reasonably achievable (ALARA). These measures include:

- (a) scheduling the test during a weekend or at night where feasible to minimize the number of affected on-site personnel,
- (b) establishing access control in accordance with existing site procedures,
- (c) training of operations personnel in performing test procedures, and
- (d) terminating hydrogen injections to permit maintenance activities in the high radiation areas resulting from HWC.

Other plants have operated with HWC and have not experienced an increase in offsite dose. The licensees do not expect a significant site boundary dose rate increase at Clinton during the test and will make appropriate measurements to assure compliance with 40 CFR 190 limits. The conduct of the test and radiological surveys obtained during the test will ensure ALARA in accordance with Regulatory Guide 8.8 and is, therefore, acceptable.

2.3 Hydrogen Storage and Distribution System

Compressed hydrogen will be supplied to the plant site in gaseous form in a 120,000 SCF capacity tube trailer. The tube trailer will be used as the storage facility and will be located no closer than 432 feet from any

building containing safety-related or class 1E components. This distance exceeds the minimum required separation distance of 70 feet as specified in Figure 4.2 of the BWR Owners Group Guidelines, "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations - 1987 Revision," EPRI NP-5283-SR-A, September 1987. Although the test facility is not a permanent HWC installation, the facility will meet all applicable sections of the BWR Owners Group Guidelines.

The hydrogen supply and distribution system consists of supply lines, control valves, a safety relief valve and an excess flow check valve (limit release of hydrogen in the event of a pipe break). Hydrogen supply lines will be routed to and piped into the suction side of the condensate booster pump. The hydrogen supply system will be leak tested and purged with an inert gas prior to introduction of hydrogen. To prevent the accumulation of combustible levels of hydrogen due to leakage, hydrogen monitors will be located at the condensate booster pumps, near the control valves and/or various locations along the supply lines. The monitors will alarm when hydrogen concentrations exceed 2 percent and isolate the hydrogen supply when the hydrogen concentration reaches 4 percent in order to prevent an explosive concentration from being reached.

Since the licensees currently store substantial quantities of chlorine onsite for water and sewage treatment, the staff evaluated the potential synergistic effect associated with the storage of hydrogen. The combination of hydrogen gas and chlorine gas can explode in the presence of any form of energy, such as sunlight or heat (250°C). Therefore, it is prudent to maintain an adequate separation distance between the chlorine and hydrogen storage facilities. The hydrogen tube trailer will be parked a distance of over 100 feet from the chlorine storage containers. The closest approach the hydrogen tube trailer will make to the chlorine storage containers exceeds 100 feet. The 100 feet separation distance is judged to be sufficient to prevent interaction of these two gases in the event of a simultaneous chlorine and hydrogen release, since it meets the requirements of NFPA 50A-5984, "Standards for Gaseous Hydrogen Systems at Consumer Sites."

On the basis of the above evaluation, we find that the proposed Technical Specification changes are in accordance with applicable sections of the BWR Owners Group Guidelines, "Guidelines for Permanent BWR Hydrogen Water Chemistry Guidelines - 1987 Revision" and are, therefore, acceptable.

3.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32, and 51.35, an environmental assessment and finding of no significant impact has been prepared and published (53 FR 37885) in the Federal Register on September 28, 1988. Accordingly, based upon the environmental assessment, the Commission has determined that the issuance of this amendment will not have a significant effect on the quality of the human environment.

4.0 CONCLUSION

We have 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: Frank J. Witt, ECEB/DEST

Dated: September 29, 1988

UNITED STATES NUCLEAR REGULATORY COMMISSIONILLINOIS POWER COMPANY, ET AL.DOCKET NO. 50-461NOTICE OF ISSUANCE OF AMENDMENT TO
FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendment No. 11 to Facility Operating License No. NPF-62 issued to the Illinois Power Company* (IP), Soyland Power Cooperative, Inc. and Western Illinois Power Cooperative, Inc., (the licensees), for operation of the Clinton Power Station, Unit 1, located in DeWitt County, Illinois.

This amendment includes a proposed change to Technical Specification Tables 2.2.1-1 and 3.3.2-2 for the main steam line radiation-high full power background radiation levels and associated trip setpoints. The proposed change consists of the addition of a footnote to the text regarding the hydrogen injection test and its effect on the main steam line radiation-high trip function. This proposed change will permit the main steam line radiation monitor setpoints to be temporarily changed based on either calculations or measurements of actual radiation levels resulting from the hydrogen injection test. Illinois Power Company intends to perform a hydrogen injection test on the reactor coolant system at the Clinton Power Station. The purpose of the

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

test is to determine the feasibility of hydrogen water chemistry control as a means of reducing intergranular stress corrosion cracking of stainless steel piping.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on June 28, 1988 (53 FR 24385). No request for a hearing or petition for leave to intervene was filed following this notice.

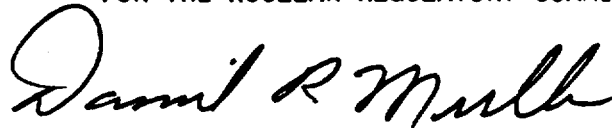
The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the Environmental Assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment.

For further details with respect to the action see (1) the application for amendment dated May 18, 1988, as supplemented on June 2, 1988, (2) Amendment No. 11 to License No. NPF-62, and (3) the Environmental Assessment and Finding of No Significant Impact. All of these items are available for public inspection at the Commission's Public Document Room, 2120 L Street, NW, Washington, DC; and at Vespasian Warner Public Library, 120 West Johnson

Street, Clinton, Illinois 61727. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Director, Division of Reactor Projects.

Dated at Rockville, Maryland this 27th day of September 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script that reads "Daniel R. Muller". The signature is written in black ink and is positioned above the typed name and title.

Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects



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

September 27, 1988

Docket No.: 50-461

Mr. Dale L. Holtzscher
Acting Manager - Licensing and Safety
Clinton Power Station
Post Office Box 678
Mail Code V920
Clinton, Illinois 61727

Dear Mr. Holtzscher:

SUBJECT: ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT -
TECHNICAL SPECIFICATION CHANGE REQUEST FOR TESTING HYDROGEN WATER
CHEMISTRY (TAC NO. 68247)

RE: CLINTON POWER STATION, UNIT NO. 1

Pursuant to 10 CFR 51.119, the Commission has requested the Office of the Federal Register to publish the enclosed "Environmental Assessment and Finding of No Significant Impact." This notice is in regard to your request dated May 18, 1988, as supplemented on June 2, 1988, for changes to the Technical Specifications (TSs) concerning radiation levels and associated trip setpoints.

Janice A. Stevens

Janice A. Stevens, Project Manager
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects

Enclosure:
As stated

cc: w/enclosure:
See next page

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UNITED STATES NUCLEAR REGULATORY COMMISSION
ILLINOIS POWER COMPANY, ET AL.
DOCKET NO. 50-461
ENVIRONMENTAL ASSESSMENT AND FINDING OF
NO SIGNIFICANT IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to the Illinois Power Company* (IP), Soyland Power Cooperative, Inc. and Western Illinois Power Cooperative, Inc., (the licensees) for Clinton Power Station, Unit 1, located in DeWitt County, Illinois.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action:

In general, the proposed license amendment would revise the Technical Specifications (TS) concerning the main steam line radiation-high full power background radiation levels and associated trip setpoints.

Specifically, the licensees requested the proposed change in order to test the feasibility of a hydrogen water chemistry (HWC) system which will be used to mitigate intergranular stress corrosion cracking of stainless steel components. The Technical Specification change will permit a temporary

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

increase in the Clinton main steam line radiation-high scram and isolation setpoints to allow operation with expected higher radiation levels resulting from hydrogen injection into the reactor coolant.

This revision to the Clinton Power Station license would be made in response to the licensees' application for amendment dated May 18, 1988, as supplemented on June 2, 1988.

The Need for the Proposed Action:

Pursuant to 10 CFR 50.90, IP, et al. have proposed an amendment to Facility Operating License No. NPF-62 which consists of a change to the TS concerning the hydrogen water chemistry tests.

The proposed change consists of the addition of a footnote to the text regarding the hydrogen injection test and its effect on the main steam line radiation-high trip function. This proposed change will permit the main steam line radiation monitor setpoints to be temporarily changed based on either calculations or measurements of actual radiation levels resulting from the hydrogen injection test. The Illinois Power Company intends to perform a hydrogen injection test on the reactor coolant system at the Clinton Power Station. The purpose of the test is to determine the feasibility of hydrogen water chemistry controls as a means of reducing intergranular stress corrosion cracking of stainless steel piping.

Environmental Impacts of the Proposed Action:

The proposed change consists of the addition of a footnote regarding the hydrogen injection test and its effect on the main steam line radiation-high trip function to Technical Specification Table 2.2.1-1, Reactor Protection

System Instrumentation Setpoints, and Table 3.3.2.-2, CRVICS Instrumentation Setpoints.

The Main Steam Line Radiation Monitors (MSLRMs) provide reactor scram as well as reactor vessel and primary containment isolation signals upon detection of high activity levels in the main steam lines. Additionally, these monitors serve to limit radioactivity released in the event of fuel failures. The proposed Technical Specification changes to Tables 2.2.1-1 and 3.3.2-2 would allow adjustments to the normal background radiation level and associated trip set points for the MSLRMs at reactor power levels greater than 20% of rated thermal power. The background radiation level shall be verified and the associated trip set points shall be returned to their normal value within 24 hours of re-establishing normal radiation levels after completion of the hydrogen injection test at greater than 20% of rated thermal power or within 12 hours of establishing reactor power levels below 20% of rated thermal power.

The licensees state that the only design basis accident which takes credit for the main steam line radiation - high trip is the control rod drop accident (CRDA). Generic analysis of the consequences of the CRDA are increasingly less severe above 10 percent power due to a faster doppler response and a lower rod worth. Above 20 percent power, the consequences of the CRDA are minimal. Since hydrogen injection will be limited to above 20 percent of rated power and the increased MSLRM trip setpoint will be reduced to normal levels below this power level, the staff concludes that the currently approved CRDA analysis for the Clinton Power Station is appropriately bounded and remains valid.

The staff has reviewed the proposed Technical Specification changes to assure that the licensees have considered the radiological implications of dose rate increases associated with N-16 activity increases due to hydrogen injections into the reactor system. Radiation surveys will be conducted at regular intervals during the test to determine radiation levels in and around the facility as well as at the site boundary. Additionally, the licensees have stated that data will be obtained for shielding design should additional shielding be necessary for a permanent hydrogen water chemistry installation.

Various radiation protection measures will be implemented to maintain doses to plant personnel as low as reasonably achievable (ALARA). Other plants have operated with HWC and have not experienced an increase in offsite dose. The licensees do not expect a significant site boundary dose rate increase at Clinton during the test and will make appropriate measurements to assure compliance with 40 CFR 190 limits. The conduct of the test and radiological surveys obtained during the test will ensure ALARA in accordance with Regulatory Guide 8.8 and is, therefore, acceptable.

Compressed hydrogen will be supplied to the plant site in gaseous form in a 120,000 SCF capacity tube trailer. The tube trailer will be used as the storage facility and will be located no closer than 432 feet from any building containing safety-related or class 1E components. Although the test facility is not a permanent HWC installation, the facility will meet the applicable sections of the BWR Owners Group Guidelines, "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations - 1987 Revision," EPRI NP-5283-SR-A, September 1987.

Since the licensees currently store substantial quantities of chlorine onsite for water and sewage treatment, the staff evaluated the potential synergistic effect associated with the storage of hydrogen. The combination of hydrogen gas and chlorine gas can explode in the presence of any form of energy, such as sunlight or heat (250°C). Therefore, it is prudent to maintain an adequate separation distance between the chlorine and hydrogen storage facilities. The hydrogen tube trailer will be kept at a minimum distance of over 100 feet from the chlorine storage containers. The 100 feet separation distance is judged to be sufficient to prevent interaction of these two gases in the event of a simultaneous chlorine and hydrogen release, since it meets the requirements of NFPA 50A-5984, "Standards for Gaseous Hydrogen Systems at Consumer Sites."

Therefore, the proposed changes do not increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure. Accordingly, the Commission concludes that this proposed action would result in no significant radiological environmental impact.

With regard to potential non-radiological impacts, the proposed changes to the TS involve systems located within the restricted area as defined in 10 CFR Part 20. The changes do not affect non-radiological plant effluents and have no other environmental impact. Therefore, the Commission concludes that there are no significant non-radiological environmental impacts associated with the proposed amendment.

The notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the Federal Register on June 28, 1988 (53 FR 24385). No request for hearing or petition for leave to intervene was filed following this notice.

Alternative to the Proposed Action:

The principal alternative would be to deny the requested amendment. This alternative, in effect, would be the same as a "no action" alternative. Since the Commission has concluded that no adverse environmental effects are associated with this proposed action, any alternative with equal or greater environmental impact need not be evaluated.

Alternative Use of Resources:

This action does not involve the use of resources not previously considered in connection with the Nuclear Regulatory Commission's Final Environmental Statement for the Clinton Power Station, Unit 1, dated May 1982.

Agencies and Persons Consulted:

The NRC staff reviewed the licensees' request of May 18, 1988, as supplemented on June 2, 1988, and did not consult other agencies or persons.

FINDING OF NO SIGNIFICANT IMPACT:

The Commission has determined not to prepare an environmental impact statement on the proposed license amendment.

Based upon this environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment.

For further details with respect to this action, see the request for amendment dated May 18, 1988, as supplemented on June 2, 1988, and the Final Environmental Statement for the Clinton Power Station dated May 1982, which are available for public inspection at the Commission's Public Document Room, 2120 L Street, N.W., Washington, D.C. 20555 and at the Vespasian Warner, 120 West Johnson Street, Clinton, Illinois 61727.

Dated at Rockville, Maryland this 20th day of September 1988.

FOR THE NUCLEAR REGULATORY COMMISSION



Daniel R. Muller, Director
Project Directorate III-2
Division of Reactor Projects - III,
IV, V and Special Projects