

October 12, 2000

Mr. Mike Reandeau
Director - Licensing
Clinton Power Station
P.O. Box 678
Clinton, IL 61727

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SUBJECT: CLINTON POWER STATION, UNIT 1 - ISSUANCE OF AMENDMENT
(TAC NO. MA9514)

Dear Mr. Reandeau:

The U.S. Nuclear Regulatory Commission (Commission) has issued the enclosed Amendment No. 133 to Facility Operating License No. NPF-62 for the Clinton Power Station, Unit 1. The amendment is in response to your application dated July 14, 2000.

The amendment slightly reduces the required minimum reactor cavity water level.

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,

/RA/

Jon B. Hopkins, Senior Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-461

Enclosures: 1. Amendment No. 133 to NPF-62
2. Safety Evaluation

cc w/encls: See next page

*See Previous Concurrence Sheet

| OFFICE | PM:PD3-2 | LA:PD3-2 | BC:SRXB* | BC:SPSB* | OGC* | SC:PD3-2 |
|--------|----------|----------|----------|----------|----------|----------|
| NAME | JHopkins | THarris | JWermiel | RBarrett | AHodgdon | AMendoza |
| DATE | 10/12/00 | 10/12/00 | 10/2/00 | 9/28/00 | 10/05/00 | 10/12/00 |

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

October 12, 2000

Mr. Mike Reandeau
Director - Licensing
Clinton Power Station
P.O. Box 678
Mail Code V920
Clinton, IL 61727

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Jon B. Hopkins, Senior Project Manager, Section 2
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Mike Reandeau

Clinton Power Station, Unit 1
AmerGen Energy Company, LLC

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

AMERGEN ENERGY COMPANY, LLC

DOCKET NO. 50-461

CLINTON POWER STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 133
License No. NPF-62

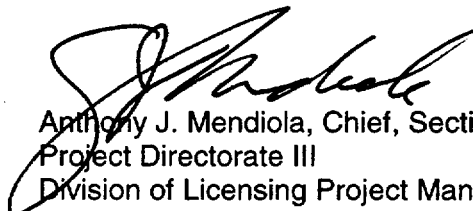
1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by AmerGen Energy Company, LLC (the licensee), dated July 14, 2000, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's 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:

(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. 133 are hereby incorporated into this license. AmerGen Energy Company, LLC 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 and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Anthony J. Mendiola, Chief, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Changes to the Technical
Specifications

Date of Issuance: October 12, 2000

ATTACHMENT TO LICENSE AMENDMENT NO. 133

FACILITY OPERATING LICENSE NO. NPF-62

DOCKET NO. 50-461

Replace the following pages of the Appendix "A" Technical Specifications with the attached revised pages. The revised pages are identified by amendment number and contain marginal lines indicating the areas of change.

Remove Pages

3.5-6
3.9-8
3.9-10
3.9-13

Insert Pages

3.5-6
3.9-8
3.9-10
3.9-13

3.5 EMERGENCY CORE COOLING SYSTEMS (ECCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEM

3.5.2 ECCS-Shutdown

LCO 3.5.2 Two ECCS injection/spray subsystems shall be OPERABLE.

APPLICABILITY: MODE 4,
MODE 5 except with the reactor cavity to steam dryer pool
gate removed and water level \geq 22 ft. 8 inches over
the top of the reactor pressure vessel flange.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| A. One required ECCS injection/spray subsystem inoperable. | A.1 Restore required ECCS injection/spray subsystem to OPERABLE status. | 4 hours |
| B. Required action and associated Completion Time of Condition A not met. | B.1 Initiate action to suspend operations with a potential for draining the reactor vessel (OPDRVs). | Immediately |
| C. Two required ECCS injection/spray subsystems inoperable. | C.1 Initiate action to suspend OPDRVs. <u>AND</u> C.2 Restore one ECCS injection/spray subsystem to OPERABLE status. | Immediately 4 hours |

RPV Water Level - Irradiated Fuel
3.9.6

3.9 REFUELING OPERATIONS

3.9.6 Reactor Pressure Vessel (RPV) Water Level - Irradiated Fuel

LC0 3.9.6 RPV water level shall be \geq 22 ft. 8 inches above the top of the RPV flange.

APPLICABILITY: During movement of irradiated fuel assemblies within the RPV.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|--------------------------------------|--------------------------------------------------------------------|-----------------|
| A. RPV water level not within limit. | A.1 Suspend movement of irradiated fuel assemblies within the RPV. | Immediately |

SURVEILLANCE REQUIREMENTS

| SURVEILLANCE | FREQUENCY |
|----------------------------------------------------------------------------------------------|-----------|
| SR 3.9.6.1 Verify RPV water level is \geq 22 ft. 8 inches above the top of the RPV flange. | 24 hours |

3.9 REFUELING OPERATIONS

3.9.8. Residual Heat Removal (RHR) - High Water Level

LC0 3.9.8 One RHR shutdown cooling subsystem shall be OPERABLE and be in operation.

-----NOTE-----
The required RHR shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level \geq 22 ft. 8 inches above the top of the RPV flange.

ACTIONS

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|---------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------|
| A. Required RHR shutdown cooling subsystem inoperable. | A.1 Verify an alternate method of decay heat removal is available. | 1 hour <u>AND</u> Once per 24 hours thereafter |
| B. Required Action and associated Completion Time of Condition A not met. | B.1 Suspend loading irradiated fuel assemblies into the RPV. | Immediately |
| | <u>AND</u> | |
| | B.2 Initiate action to restore secondary containment to OPERABLE status. | Immediately |
| | <u>AND</u> | (continued) |

3.9 REFUELING OPERATIONS

3.9.9 Residual Heat Removal (RHR) - Low Water Level

LCO 3.9.9 Two RHR shutdown cooling subsystems shall be OPERABLE, and one RHR shutdown cooling subsystem shall be in operation.

-----NOTE-----
The required operating shutdown cooling subsystem may be removed from operation for up to 2 hours per 8 hour period.

APPLICABILITY: MODE 5 with irradiated fuel in the reactor pressure vessel (RPV) and the water level \leq 22 ft. 8 inches above the top of the RPV flange.

ACTIONS

-----NOTE-----
Separate Condition entry is allowed for each RHR shutdown cooling subsystem.

| CONDITION | REQUIRED ACTION | COMPLETION TIME |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| A. One or two RHR shutdown cooling subsystems inoperable. | A.1 Verify an alternate method of decay heat removal is available for each inoperable RHR shutdown cooling subsystem. | 1 hour <u>AND</u> Once per 24 hours thereafter |

(continued)



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 133 TO FACILITY OPERATING LICENSE NO. NPF-62

AMERGEN ENERGY COMPANY, LLC

CLINTON POWER STATION, UNIT 1

DOCKET NO. 50-461

1.0 INTRODUCTION

By letter dated July 14, 2000, AmerGen Energy Company, LLC (AmerGen or the licensee), proposed an amendment to the Clinton Power Station (CPS) Technical Specifications (TSs). The proposed amendment would slightly reduce the required minimum reactor cavity water level from 23 feet to 22 feet, 8 inches.

2.0 BACKGROUND

The TS required minimum reactor cavity water level is measured from the top of the reactor pressure vessel (RPV) flange to the surface of the upper containment pool which is determined by the pool skimmer/scupper level. The licensee has determined that there is uncertainty as to the actual distance between the RPV flange and the pool surface, and is concerned that the plant as constructed has little or possibly no margin to meet the TS requirement of 23 feet. Therefore, the licensee intends to measure the distance at the beginning of the upcoming refueling outage scheduled to begin October 15, 2000. If the TS requirement cannot be met, more restrictive requirements, such as no irradiated fuel movement, apply. Therefore, the licensee requested a slight reduction in the TS requirement from 23 feet to 22 feet, 8 inches to account for a possible construction difference from design. The actual plant configuration will not be reconstructed.

3.0 EVALUATION

A minimum depth of water is required for three reasons. They are: 1) to ensure that the radiological consequences of a fuel handling accident are acceptably low, 2) to ensure adequate backup decay heat removal capability, and 3) to ensure adequate coolant inventory to allow sufficient time for an operator to take action to terminate an inadvertent draindown.

The four inch decrease in the TS required minimum reactor cavity water level amounts to a decrease of 1.5 percent of water depth and volume. This decrease is small such that coolant inventory, decay heat removal, and radiological consequences are not significantly affected.

No specific analysis is provided in the Updated Safety Analysis Report for a dropped irradiated fuel assembly striking the RPV flange because this accident is bounded by the accident where an irradiated fuel assembly is dropped onto the reactor core. For the bounding accident of dropping a fuel assembly onto the reactor core, there is an extra 30 feet of water between the RPV flange and the top of the core. Therefore, there is 53 feet of water from the top of the core and atmosphere. The 4 inch decrease in water level will have very little effect on the radiological consequences of this accident. Even though a fuel assembly dropped on the RPV flange will have only 22 feet 8 inches of water from the flange to atmosphere, the quantity of fission products released is much less than the bounding accident. This is because a fuel assembly dropping 52 feet 8 inches to the core would have greater velocity and cause greater damage than a fuel assembly dropped 22 feet 8 inches to the flange and then dropping an additional 30 feet to the core. The Nuclear Regulatory Commission (NRC) staff finds that the fuel drop accident onto the core is still the bounding accident inside containment, and the accident is not significantly affected by the proposed change of decreasing water level by 4 inches.

Dropping of an irradiated fuel assembly onto the reactor core or onto the RPV flange takes place only in the primary containment and any radiological releases associated with these events must be transferred to the secondary containment where it is processed through the standby gas treatment system before release to the environment. Therefore, the most limiting fuel handling accident is a drop of an irradiated fuel assembly onto spent fuel racks in the fuel building outside of the primary containment. Lowering the required minimum reactor cavity water level from 23 feet to 22 feet, 8 inches has no effect on the radiological consequences of this most limiting fuel handling accident because the water level in the spent fuel pool where spent fuel racks are stored is not changed and still maintained greater than 23 feet.

The TS allow reduced residual heat removal system (RHR) shutdown cooling requirements with the reactor cavity filled to the upper pool skimmer/scupper level due to the decay heat removal capability of the water volume. The licensee states that plant experience shows that the heat-up rate in this condition is less than 10 degrees Fahrenheit per hour at 4 days after plant shutdown with no refueling performed. At this rate, with no forced cooling, time to boiling is approximately 15 hours. A 1.5 percent decrease in water volume would reduce the time to boiling by 15 minutes. The staff finds that the decay heat removal capability of the reactor cavity water volume is acceptable with the proposed decrease in water volume.

In the event of a reactor draindown event, the reactor cavity water volume provides sufficient inventory to allow operator action to terminate the draindown event before fuel is uncovered. Similarly, as with the decay heat removal capability, the proposed 1.5 percent decrease in water volume does not significantly affect the time for the operators to act in the event of a draindown event. The staff finds that the operator action time for a draindown event is acceptable with the proposed decrease in water volume.

The staff reviewed the proposed TS change from 23 feet to 22 feet 8 inches for the required minimum water level above the RPV flange and, based on the above, the staff finds the proposed change to be acceptable.

Also, the staff reviewed the proposed TS bases changes and finds the proposed bases changes to reflect the change from 23 feet to 22 feet 8 inches in water level required above the RPV flange and reflect that the bounding fuel handling accident inside containment is the fuel assembly dropped onto the reactor core. The staff finds the proposed bases changes reflect the changed TS and are 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 (65 FR 51347). 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: J. Hopkins

Date: October 12, 2000