March 16, 1989

Docket No. 50-416

DISTRIBUTION
See attached sheet

Mr. W. T. Cottle
Vice President, Nuclear Operations
System Energy Resources, Inc.
Post Office Box 23054
Jackson, Mississippi 39205

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING ONE-TIME EXCEPTIONS TO TECHNICAL SPECIFICATION 3.0.4 (TAC NO. 71903)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 58 to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. This amendment consists of changes to the Technical Specifications (TS) in response to your application dated January 26, 1989, as supplemented February 20, March 3, and March 6, 1989.

The amendment provides one-time exceptions to TS 3.0.4 approved for use only during the third refueling outage. The exceptions will allow entry into specified operational conditions without meeting the Limiting Condition for Operation, provided the requirements of the associated action statements are met. Those TS affected are:

a. Residual Heat Removal - Cold Shutdown, TS 3.4.9.2, ACTIONs a and c

b. ECCS - Shutdown, TS 3.5.2, ACTION a

c. Suppression Pool, TS 3.5.3, ACTION c

d. Containment and Drywell Isolation Valves, TS 3.6.4, ACTIONs b and c

e. Secondary Containment Automatic Isolation Dampers/Valves, TS 3.6.6.2, ACTIONs b and c

f. Standby Service Water System, TS 3.7.1.1, ACTIONs b, c, and d

g. Ultimate Heat Sink, TS 3.7.1.3, ACTION a

h. Control Room Emergency Filtration System, TS 3.7.2, ACTION b.1

i. Residual Heat Removal and Coolant Circulation - Low Water, TS 3.9.11.2, ACTIONs a and b

DF01
1/1

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

/S/

Lester L. Kintner, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 58 to NPF-29
2. Safety Evaluation

cc w/enclosures:
See next page

[GGNS AMENDMENT 71438]

OFC	:LA:PD21:DRPR	:PM:PD21:DRPR	:D:PD21:DRPR	:	:	:	: : :
NAME	:PAnderson	:LKintner:jfw	:EBeeves	:	:	:	: :
DATE	:3/10/89	:3/9/89	:3/16/89	:3/13/89	:	:	

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

March 16, 1989

Docket No. 50-416

Mr. W. T. Cottle
Vice President, Nuclear Operations
System Energy Resources, Inc.
Post Office Box 23054
Jackson, Mississippi 39205

Dear Mr. Cottle:

SUBJECT: ISSUANCE OF AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF NUCLEAR STATION, UNIT 1, REGARDING ONE-TIME EXCEPTIONS TO TECHNICAL SPECIFICATION 3.0.4 (TAC NO. 71903)

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c. Suppression Pool, TS 3.5.3, ACTION c

d. Containment and Drywell Isolation Valves, TS 3.6.4, ACTIONs b and c

e. Secondary Containment Automatic Isolation Dampers/Valves, TS 3.6.6.2, ACTIONs b and c

f. Standby Service Water System, TS 3.7.1.1, ACTIONs b, c, and d

g. Ultimate Heat Sink, TS 3.7.1.3, ACTION a

h. Control Room Emergency Filtration System, TS 3.7.2, ACTION b.1

i. Residual Heat Removal and Coolant Circulation - Low Water, TS 3.9.11.2, ACTIONs a and b

A copy of the Safety Evaluation is also enclosed. The Notice of Issuance will be included in the Commission's bi-weekly Federal Register notice.

Sincerely,

L L Kintner

Lester L. Kintner, Senior Project Manager
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 58 to NPF-29
2. Safety Evaluation

cc w/enclosures:
See next page

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Grand Gulf Nuclear Station (GGNS)

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AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. NPF-29 - GRAND GULF

Docket File
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ARM/LFMB

cc: Licensee/Applicant Service List

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

SYSTEM ENERGY RESOURCES, INC., ET AL

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 58
License No. NPF-29

1. The Nuclear Regulatory Commission (the Commission) has found that

   A. The application for amendment by System Energy Resources, Inc., (the licensee), dated January 26, 1989, as supplemented February 20, March 3, and March 6, 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-29 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 58 , are hereby incorporated into this license. System Energy Resources, Inc. 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

Edward A. Reeves

Edward A. Reeves, Acting Director
Project Directorate II-1
Division of Reactor Projects I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 16, 1989

ATTACHMENT TO LICENSE AMENDMENT NO. 58

FACILITY OPERATING LICENSE NO. NPF-29

DOCKET NO. 50-416

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	Insert
3/4 4-27	3/4 4-27
3/4 5-6	3/4 5-6
3/4 5-9	3/4 5-9
3/4 6-28	3/4 6-28
3/4 6-49	3/4 6-49
3/4 7-1	3/4 7-1
3/4 7-2	3/4 7-2
3/4 7-4	3/4 7-4
3/4 7-5	3/4 7-5
3/4 9-19	3/4 9-19

COLD SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.4.9.2 Two[#] shutdown cooling mode loops of the residual heat removal (RHR) system shall be OPERABLE and, unless at least one recirculation pump is in operation, at least one shutdown cooling mode loop shall be in operation[*,##] with each loop consisting of at least:

a. One OPERABLE RHR pump, and

b. One OPERABLE RHR heat exchanger.

APPLICABILITY: OPERATIONAL CONDITION 4.

ACTION:

a. With less than the above required RHR shutdown cooling mode loops OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the operability of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode loop. The provisions of Specifiction 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 4 from 5.**

b. With no RHR shutdown cooling mode loop in operation, within one hour establish reactor coolant circulation by an alternate method and monitor reactor coolant temperature and pressure at least once per hour.

SURVEILLANCE REQUIREMENTS

4.4.9.2 At least one shutdown cooling mode loop of the residual heat removal system or alternate method shall be determined to be in operation and circulating reactor coolant at least once per 12 hours.

[#]One RHR shutdown cooling mode loop may be inoperable for up to 2 hours for surveillance testing provided the other loop is OPERABLE and in operation.

*The shutdown cooling pump may be removed from operation for up to 2 hours per 8 hour period provided the other loop is OPERABLE.

##The shutdown cooling mode loop may be removed from operation during hydrostatic testing.

**This exception is applicable until startup from the third refueling outage.

LIMITING CONDITION FOR OPERATION

3.5.2 At least two of the following shall be OPERABLE:

a. The low pressure core spray (LPCS) system with a flow path capable of taking suction from the suppression pool and transferring the water through the spray sparger to the reactor vessel.

b. Low pressure coolant injection (LPCI) subsystem "A" of the RHR system with a flow path capable of taking suction from the suppression pool upon being manually realigned and transferring the water to the reactor vessel.

c. Low pressure coolant injection (LPCI) subsystem "B" of the RHR system with a flow path capable of taking suction from the suppression pool upon being manually realigned and transferring the water to the reactor vessel.

d. Low pressure coolant injection (LPCI) subsystem "C" of the RHR system with a flow path capable of taking suction from the suppression pool upon being manually realigned and transferring the water to the reactor vessel.

e. The high pressure core spray (HPCS) system with a flow path capable of taking suction from one of the following water sources and transferring the water through the spray sparger to the reactor vessel:

   1. From the suppression pool, or
   2. When the suppression pool level is less than the limit or is drained, from the condensate storage tank containing at least 170,000 available gallons of water, equivalent to a level of 18 feet.

APPLICABILITY: OPERATIONAL CONDITION 4 and 5*.

ACTION:

a. With one of the above required subsystems/systems inoperable, restore at least two subsystems/systems to OPERABLE status within 4 hours or suspend all operations that have a potential for draining the reactor vessel. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 5 from 5*.#

b. With both of the above required subsystems/systems inoperable, suspend CORE ALTERATIONS and all operations that have a potential for draining the reactor vessel. Restore at least one subsystem/system to OPERABLE status within 4 hours or establish SECONDARY CONTAINMENT INTEGRITY within the next 8 hours.

---

*The ECCS is not required to be OPERABLE provided that the reactor vessel head is removed, the cavity is flooded, the reactor cavity and transfer canal gates in the upper containment pool are removed, and water level is maintained within the limits of Specifications 3.9.8 and 3.9.9.

#This exception is applicable until startup from the third refueling outage.

LIMITING CONDITION FOR OPERATION (Continued)

ACTION: (Continued)

c. With one suppression pool water level instrumentation division inoperable, restore the inoperable division to OPERABLE status within 7 days or verify the suppression pool water level to be greater than or equal to 18'4-1/12" or 12'8", as applicable, at least once per 12 hours by an alternate indicator. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 5 from 4 or 5*.##

d. With both suppression pool water level instrumentation divisions inoperable, restore at least one inoperable division to OPERABLE status within 8 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours and verify the suppression pool water level to be greater than or equal to 18'4-1/12" or 12'8", as applicable, at least once per 12 hours by at least one alternate indicator.

SURVEILLANCE REQUIREMENTS

4.5.3.1 The suppression pool shall be determined OPERABLE by verifying:

a. The water level to be greater than or equal to, as applicable:

1. 18'4-1/12" at least once per 24 hours.

2. 12'8" at least once per 12 hours.

b. Two suppression pool water level instrumentation divisions, with 1 channel per division, OPERABLE with the low water level alarm setpoint $\geq$ 18'5½" or 12'8", as applicable, by performance of a:

1. CHANNEL CHECK at least once per 24 hours,

2. CHANNEL FUNCTIONAL TEST at least once per 31 days, and

3. CHANNEL CALIBRATION at least once per 18 months.

4.5.3.2 With the suppression pool level less than the above limit or drained in OPERATIONAL CONDITION 4 or 5*, at least once per 12 hours:

a. Verify the required conditions of Specification 3.5.3.b to be satisfied, or

b. Verify footnote conditions * to be satisfied.

##This exception is applicable until startup from the third refueling outage.

3/4.6.4 CONTAINMENT AND DRYWELL ISOLATION VALVES

LIMITING CONDITION FOR OPERATION

3.6.4 The containment and drywell isolation valves shown in Table 3.6.4-1 shall be OPERABLE with isolation times less than or equal to those shown in Table 3.6.4-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3, and #.

ACTION:

With one or more of the containment or drywell isolation valves shown in Table 3.6.4-1 inoperable, maintain at least one isolation valve OPERABLE in each affected penetration that is open and within 4 hours either:

a. Restore the inoperable valve(s) to OPERABLE status, or

b. Isolate each affected penetration by use of at least one deactivated automatic valve secured in the isolated position,* (the provisions of Specification 3.0.4 are not applicable for entry into condition # for a maximum of 10 inoperable containment and drywell isolation valves**), or

c. Isolate each affected penetration by use of at least one closed manual valve or blind flange* (the provisions of Specification 3.0.4 are not applicable for entry into condition # for a maximum of 10 inoperable containment and drywell isolation valves**).

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

*Isolation valves, except MSIVs, closed to satisfy these requirements may be reopened on an intermittent basis under administrative controls (OPERATIONAL CONDITION changes are not allowed while isolation valves are open under these administrative controls**).

#Isolation valves shown in Table 3.6.4-1 are also required to be OPERABLE when their associated actuation instrumentation is required to be OPERABLE per Table 3.3.2-1.

**This exception is applicable until startup from the third refueling outage.

SECONDARY CONTAINMENT AUTOMATIC ISOLATION DAMPERS/VALVES

LIMITING CONDITION FOR OPERATION

3.6.6.2 The secondary containment ventilation system automatic isolation dampers/valves shown in Table 3.6.6.2-1 shall be OPERABLE with isolation times less than or equal to the times shown in Table 3.6.6.2-1.

APPLICABILITY: OPERATIONAL CONDITIONS 1, 2, 3 and *.

ACTION:

With one or more of the secondary containment ventilation system automatic isolation dampers/valves shown in Table 3.6.6.2-1 inoperable, maintain at least one isolation damper/valve OPERABLE in each affected penetration that is open, and within 8 hours either:

a. Restore the inoperable damper/valve(s) to OPERABLE status, or

b. Isolate each affected penetration by use of at least one deactivated automatic damper/valve secured in the isolation position (the provisions of Specification 3.0.4 are not applicable for entry into condition * for a maximum of 10 inoperable secondary containment isolation dampers/valves#), or

c. Isolate each affected penetration by use of at least one closed manual valve or blind flange (the provisions of Specification 3.0.4 are not applicable for entry into condition * for a maximum of 10 inoperable secondary containment isolation dampers/valves#).

Otherwise, in OPERATIONAL CONDITION 1, 2 or 3, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

Otherwise, in Operational Condition *, suspend handling of irradiated fuel in the primary or secondary containment, CORE ALTERATIONS and operations with a potential for draining the reactor vessel. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.6.6.2 Each secondary containment ventilation system automatic isolation damper/ valve shown in Table 3.6.6.2-1 shall be demonstrated OPERABLE:

a. Prior to returning the damper/valve to service after maintenance, repair or replacement work is performed on the damper/valve or its associated actuator, control or power circuit by cycling the damper/valve through at least one complete cycle of full travel and verifying the specified isolation time.

b. During COLD SHUTDOWN or REFUELING at least once per 18 months by verifying that on a containment isolation test signal each isolation damper/valve actuates to its isolation position.

c. By verifying the isolation time to be within its limit when tested pursuant to Specification 4.0.5.

*When irradiated fuel is being handled in the primary or secondary containment and during CORE ALTERATIONS and operations with a potential for draining the reactor vessel.

#This exception is applicable until startup from the third refueling outage.

3/4.7 PLANT SYSTEMS

3/4.7.1 SERVICE WATER SYSTEMS

STANDBY SERVICE WATER SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.1.1 Each of the following independent standby service water (SSW) system subsystems shall be OPERABLE with each subsystem comprised of:

a. One OPERABLE SSW pump, and
b. An OPERABLE flow path capable of taking suction from the associated SSW cooling tower basin and transferring the water through the RHR heat exchangers and to associated plant equipment, as required, shall be OPERABLE as follows:

1. In OPERATIONAL CONDITIONS 1, 2, and 3: two subsystems; and
2. In OPERATIONAL CONDITIONS 4, 5, and *: the subsystems associated with the systems and components required to be OPERABLE by Specifications 3.4.9.2, 3.5.2, 3.8.1.2, 3.9.11.1 or 3.9.11.2.

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

ACTION:

a. In OPERATIONAL CONDITION 1, 2 or 3:

1. With one SSW subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 72 hours or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.
2. With both SSW subsystems inoperable, be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN** within the following 24 hours.

b. In OPERATIONAL CONDITION 3 or 4 with the SSW subsystem, which is associated with an RHR loop required OPERABLE by Specification 3.4.9.1 or 3.4.9.2, inoperable, declare the associated RHR loop inoperable and take the ACTION required by Specification 3.4.9.1 or 3.4.9.2, as applicable. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 4 from 5.#

c. In OPERATIONAL CONDITION 4 or 5 with the SSW subsystem, which is associated with an ECCS pump required OPERABLE by Specification 3.5.2, inoperable, declare the associated ECCS pump inoperable and take the ACTION required by Specification 3.5.2. The provisions of Specification 3.0.4 are not applicable for lowering reactor cavity water level.#

---

*When handling irradiated fuel in the primary or secondary containment.

**Whenever both SSW subsystems are inoperable, if unable to attain COLD SHUTDOWN as required by this ACTION, maintain reactor coolant temperature as low as practical by use of alternate heat removal methods.

#This exception is applicable until startup from the third refueling outage.

LIMITING CONDITION FOR OPERATION

ACTION: (Continued)

d. In OPERATIONAL CONDITION 5 with the SSW subsystem, which is associated with an RHR system required OPERABLE by Specification 3.9.11.1 or 3.9.11.2, inoperable, declare the associated RHR system inoperable and take the ACTION required by Specification 3.9.11.1 or 3.9.11.2, as applicable. The provisions of Specification 3.0.4 are not applicable for lowering reactor cavity water level.#

e. In OPERATIONAL CONDITION *, with the SSW subsystem, which is associated with a diesel generator required OPERABLE by Specification 3.8.1.2, inoperable, declare the associated diesel generator inoperable and take the ACTION required by Specification 3.8.1.2. The provisions of Specification 3.0.3 are not applicable.

f. In OPERATIONAL CONDITIONS 1, 2, 3, 4, or 5 with the SSW subsystem, which is associated with a diesel generator required OPERABLE by Specification 3.8.1.1 or 3.8.1.2, inoperable, declare the associated diesel generator inoperable and take the ACTION required by Specification 3.8.1.1 or 3.8.1.2 as applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.1 At least the above required standby service water system subsystem(s) shall be demonstrated OPERABLE:

a. At least once per 31 days by verifying that each valve in the flow path that is not locked, sealed or otherwise secured in position, is in its correct position.

b. At least once per 18 months during shutdown by verifying that each automatic valve servicing safety related equipment actuates to its correct position on an actuation test signal.

#This exception is applicable until startup from the third refueling outage.

PLANT SYSTEMS

ULTIMATE HEAT SINK

LIMITING CONDITION FOR OPERATION

3.7.1.3 At least the following independent SSW cooling tower basins, each with:

a. A minimum basin water level at or above elevation 130'3" Mean Sea Level, USGS datum, equivalent to an indicated level of ≥87".

b. Two OPERABLE cooling tower fans,#

shall be OPERABLE:

a. In OPERATIONAL Condition 1, 2 and 3, two basins,##

b. In OPERATIONAL Condition 4, 5 and *, the basins## associated with systems and components required OPERABLE by Specifications 3.7.1.1 and 3.7.1.2.

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

ACTION:

a. In OPERATIONAL CONDITION 1, 2, 3, 4, 5 and * with one SSW cooling tower basin inoperable, declare the associated SSW subsystem inoperable and, if applicable, declare the HPCS service water system inoperable, and take the ACTION required by Specifications 3.7.1.1 and 3.7.1.2, as applicable. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITIONS 4 and 5.**

b. In OPERATIONAL CONDITION 1, 2, 3, 4 or 5 with both SSW cooling tower basins inoperable, declare the SSW system and the HPCS service water system inoperable and take the ACTION required by Specifications 3.7.1.1 and 3.7.1.2.

c. In Operational Condition * with both SSW cooling tower basins inoperable, declare the SSW system inoperable and take the ACTION required by Specification 3.7.1.1. The provisions of Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.7.1.3 At least the above required SSW cooling tower basins shall be determined OPERABLE at least once per:

a. 24 hours by verifying basin water level to be greater than or equal to 87".

b. 31 days by starting from the control room each SSW cooling tower fan not already in operation and operating each fan for at least 15 minutes.

c. 18 months by verifying that each SSW cooling tower fan starts automatically when the associated SSW subsystem is started.

---

*When handling irradiated fuel in the primary or secondary containment.

#The basin cooling tower fans are not required to be OPERABLE for HPCS service water system OPERABILITY.

##An OPERABLE basin shall have a 30 day supply of water either self-contained or by means of an OPERABLE siphon.

**This exception is applicable until startup from the third refueling outage.

3/4.7.2 CONTROL ROOM EMERGENCY FILTRATION SYSTEM

LIMITING CONDITION FOR OPERATION

3.7.2 Two independent control room emergency filtration system subsystems shall be OPERABLE.

APPLICABILITY: All OPERATIONAL CONDITIONS and *.

ACTION:

a. In OPERATIONAL CONDITION 1, 2 or 3 with one control room emergency filtration subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

b. In OPERATIONAL CONDITION 4, 5 or *:

1. With one control room emergency filtration subsystem inoperable, restore the inoperable subsystem to OPERABLE status within 7 days or initiate and maintain operation of the OPERABLE subsystem in the isolation mode of operation. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 4 from 5.#

2. With both control room emergency filtration subsystems inoperable, suspend CORE ALTERATIONS, handling of irradiated fuel in the primary or secondary containment and operations with a potential for draining the reactor vessel.

c. The provisions of Specification 3.0.3 are not applicable in Operational Condition *.

SURVEILLANCE REQUIREMENTS

4.7.2 Each control room emergency filtration subsystem shall be demonstrated OPERABLE:

a. At least once per 31 days on a STAGGERED TEST BASIS by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the subsystem operates for at least 10 continuous hours with the heaters OPERABLE.

b. At least once per 18 months or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) following painting, fire or chemical release in any ventilation zone communicating with the subsystem by:

1. [DELETED]

*When irradiated fuel is being handled in the primary or secondary containment.

#This exception is applicable until startup from the third refueling outage.

LOW WATER LEVEL

LIMITING CONDITION FOR OPERATION

3.9.11.2 Two shutdown cooling mode trains of the residual heat removal (RHR) system shall be OPERABLE and at least one train shall be in operation,* with each train consisting of at least:

a. One OPERABLE RHR pump, and

b. One OPERABLE RHR heat exchanger train.

APPLICABILITY: OPERATIONAL CONDITION 5, when irradiated fuel is in the reactor vessel and the water level is less than 22 feet 8 inches above the top of the reactor pressure vessel flange.

ACTION:

a. With less than the above required shutdown cooling mode trains of the RHR system OPERABLE, within one hour and at least once per 24 hours thereafter, demonstrate the OPERABILITY of at least one alternate method capable of decay heat removal for each inoperable RHR shutdown cooling mode train.

b. With no RHR shutdown cooling mode train in operation, within one hour establish reactor coolant circulation by an alternate method and monitor reactor coolant temperature at least once per hour.

c. The provisions of Specification 3.0.4 are not applicable for entry into OPERATIONAL CONDITION 5 from 4 or lowering reactor cavity water level.#

SURVEILLANCE REQUIREMENTS

4.9.11.2 At least one shutdown cooling mode train of the residual heat removal system or alternate method shall be verified to be in operation and circulating reactor coolant at least once per 12 hours.

*The shutdown cooling pump may be removed from operation for up to 2 hours per 8-hour period.

#This exception is applicable until startup from the third refueling outage.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 58 TO FACILITY OPERATING LICENSE NO. NPF-29

SYSTEM ENERGY RESOURCES, INC., ET AL.

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

1.0 INTRODUCTION

By letter dated January 26, 1989, as supplemented February 20, March 3, and March 6, 1989, System Energy Resources, Inc. (the licensee), requested an amendment to Facility Operating License No. NPF-29 for the Grand Gulf Nuclear Station, Unit 1. The proposed amendment would provide one time exceptions to Section 3.0.4 in the Technical Specifications (TS) for use only during the third refueling outage (RF03). The exceptions would allow entry into certain operational conditions (OC) without meeting the Limiting Conditions for Operation (LCO), provided the requirements of associated action statements are met.

The submittals dated February 20, March 3 and March 6, 1989, provided supplemental information in response to staff concerns raised during the review process. These submittals, which provide a narrowing of the scope of the original exception request and an expanded safety analysis for justifying the exceptions, did not alter the action noticed or affect the initial determination published in the Federal Register on February 8, 1989.

Section 3.0.4 in the Technical Specifications states:

> Entry into an OPERATIONAL CONDITION or other specified condition shall not be made unless the conditions in the Limiting Conditions for Operation are met without reliance on provisions contained in the ACTION requirements. This provision shall not prevent passage through or to OPERATIONAL CONDITIONS as required to comply with ACTION requirements. Exceptions to these requirements are stated in the individual Specifications.

The proposed changes to the TS, as identified in the February 20, 1989 submittal, would provide exceptions to Specification 3.0.4 to be used only during the third refueling outage in the following areas:

1. The first proposed change would add a sentence to Action a and revise the ** footnote to TS 3.4.9.2 (RHR - Cold Shutdown) to state that the provisions of Specification 3.0.4 are not applicable

for entry into OC 4 from 5 and that the change is applicable until startup from RF03. The present Action c is being deleted since the applicability expired at the end of the previous refueling outage.

2. The second proposed change would add a statement to Action a of TS 3.5.2 (ECCS - Shutdown) to state that the provisions of Specification 3.0.4 are not applicable for entry into OC 5 from 5* and revise the # footnote to state that the change is applicable until startup from RF03.

3. The third proposed change would add a statement to Action c of TS 3.5.3 (Suppression Pool) to state that the provisions of Specification 3.0.4 are not applicable for entry into OC 5 from 4 or 5* and a ** footnote to state that the change is applicable until startup from RF03.

4. The fourth proposed change would add a statement to Actions b and c of TS 3.6.4 (Containment and Drywell Isolation Valves) to state that the provisions of Specification 3.0.4 are not applicable for entry into condition # for a maximum of 10 inoperable containment and drywell isolation valves and a ** footnote to state that the change is applicable until startup from RF03. In addition, a statement is added to the * footnote to state that OPERATIONAL CONDITION changes are not allowed while isolation valves are open under administrative controls of the * footnote.

5. The fifth proposed change would add a statement to Actions b and c of TS 3.6.6.2 (Secondary Containment Automatic Isolation Dampers/Valves) to state that the provisions of Specification 3.0.4 are not applicable for entry into condition * for a maximum of 10 inoperable dampers/valves and a # footnote to state that the change is applicable until startup from RF03.

6. The sixth proposed change would add a statement to Actions b, c and d of TS 3.7.1.1 (Standby Service Water System) to state that the provisions of Specification 3.0.4 are not applicable. The change to Action b will only be applicable for entry into OC 4 from 5. The change to Action c will only be applicable for lowering reactor cavity water level. The change to Action d will only be applicable for lowering reactor cavity water level in OC 5. Also, the # footnote is revised to state that the changes are applicable until startup from RF03.

7. The seventh proposed change would add a statement to Action a of TS 3.7.1.3 (Ultimate Heat Sink) to state that the provisions of Specification 3.0.4 are not applicable for entry into OC 4, 5 and * and a ** footnote to state that the change is applicable until startup from RF03.

8. The eighth proposed change will add a statement to Action b.1 of TS 3.7.2 (Control Room Emergency Filtration System) to state that the provisions of Specification 3.0.4 are not applicable for entry into OC 4 from 5 and a # footnote to state that the change is applicable until startup from RF03.

9. The ninth proposed change will add a new Action c to TS 3.9.11.2 (RHR and Coolant Recirculation - Low Water) to state that the provisions of Specification 3.0.4 are not applicable for entry into OC 5 from 4 or lowering reactor cavity water level and revise the # footnote to state that the change is applicable until startup from RF03.

2.0 EVALUATION

We have reviewed the licensee's proposals for the one time exceptions to TS 3.0.4 for certain TS to be effective only during RF03. The proposals included a description and justification of the requested TS changes, a description of the outage activities that result in the request for the exceptions and a safety analysis. The analysis reviewed the safety implications of entering Operational Conditions (OC) when the plant is being operated in Action Statement (AS) requirements, thus, not fully meeting the requirements in the LCO.

The changes in OC in which exceptions to TS 3.0.4 were requested are listed below by major activity in which the exceptions are needed:

Activity Which Changes Operational Conditions	Exception Requested
Detensioning bolts in reactor pressure vessel (RPV) head and removing head with one inoperable RHR loop	TS 3.9.11.2, AS a
Drain water from reactor cavity to RPV flange with one inoperable ECCS subsystem and one inoperable RHR loop	TS 3.5.2, AS a TS 3.7.1.1, AS c&d TS 3.7.1.3, AS a TS 3.9.11.2, AS a&b
Drain water from reactor cavity to RPV flange with one inoperable RHR loop	TS 3.7.1.1, AS c&d TS 3.7.1.3, AS a TS 3.9.11.2, AS a&b
Retensioning bolts in RPV with one inoperable RHR loop	TS 3.4.9.2, AS a TS 3.7.1.1, AS b

In addition to the above listed activities, which change operational conditions, there are four other activities for which exceptions to TS 3.0.4 were requested because they will be performed during several OC. These four activities and the exceptions requested are listed below:

Activities	Exception Requested
Alternate Decay Heat Removal System (ADHRS) installation and operation	TS 3.5.3, AS c
Containment and drywell isolation valves maintenance, inspection and testing	TS 3.6.4, AS b and c
Secondary containment isolation dampers and valves maintenance, inspection and testing	TS 3.6.6.2, AS b and c
Control room emergency filtration system maintenance and surveillance	TS 3.7.2, AS b.1

The acceptability of these proposed exceptions to TS 3.0.4 are evaluated below.

2.1 Detension bolts in RPV head with one inoperable RHR loop

This activity results in going from OC 4 to OC 5 with a low reactor cavity water level. TS 3.9.11.2 LCO requires two operable shutdown cooling mode loops of the RHR system.

At this time, RHR shutdown cooling loop A will be operable and running. RHR shutdown cooling loop B will be inoperable due to feedwater B local leak rate testing, which prevents use of the normal return path through the feedwater sparger. Action a allows an alternate method capable of decay heat removal to be used provided the method is demonstrated before use. The licensee proposes to use RHR shutdown cooling loop B with the return path through the LPCI B discharge line as the alternate method. The LPCI B line discharges into the space between the fuel assemblies near the top of the core.

This alternate method provides an acceptable level of safety because the only difference between the proposed alternate and an operable shutdown cooling loop is that the discharge will be into the space between fuel assemblies rather than to the feedwater sparger. TS 3.9.11.2, AS a, requires that the decay heat removal capability of the alternate method be demonstrated before use. This action is required so that any differences in reactor coolant flow within the reactor vessel for the different return path of the alternate method will be determined by test to be acceptable prior to use.

Accordingly, the proposed change to TS 3.9.11.2, AS a, is acceptable for this activity.

2.2 Drain water from reactor cavity with one inoperable ECCS subsystem and one inoperable RHR loop

This activity results in going from a high water level in the reactor cavity to a low water level (to the reactor pressure vessel flange) during OC 5. TS 3.5.2 LCO requires at least two ECCS subsystems to be operable in OC 5 except that no ECCS subsystems are required to be operable for a high water level. TS 3.9.11.2 LCO requires two operable shutdown cooling mode loops of the RHR system. TS 3.7.1.1 LCO requires operable standby service water (SSW) subsystems associated with the RHR loop required to be operable by TS 3.9.11.2. TS 3.7.1.3 LCO requires an operable cooling tower basin associated with the subsystems required to be operable by TS 3.7.1.1.

At the start of this cavity draining, the low pressure core spray (LPCS) and low pressure coolant injection (LPCI) subsystem A will be operable. As the water level is lowered, the LPCI A will become inoperable because the jockey pump for LPCI A must be isolated because of the operation of a new system, the ADHRS. We are reviewing the acceptability of the ADHRS separately. By letter dated March 3, 1989, the licensee committed to determine actions necessary to prevent adverse effects of the ADHRS on LPCI operability for future outages and provide results to the NRC by October 7, 1989. Action a allows one of the required subsystems to be inoperable provided all operations that have a potential for draining the reactor are suspended. Lowering the reactor cavity water level is not an operation with the potential to drain the reactor vessel, because the cavity drains are external to the reactor vessel at about the reactor vessel flange elevation. The cavity water level cannot be lowered below the reactor vessel flange when it is drained in this manner.

During our review we noted that the TS 3.5.2 LCO lists three ECCS subsystems that are manually initiated (LPCI A, LPCI B and LPCI C) and two subsystems (LPCS and HPCS) that are automatically initiated when the reactor pressure vessel water level is low. We were concerned that if two manually initiated subsystems were required to be operable, the core may be uncovered in an inadvertent drain event. In response to this concern, the licensee, by letter dated March 6, 1989 (AECM-89/0052), committed to implement administrative controls in the form of a Technical Specification Position Statement (TSPS) to require that at least one of the two ECCS required operable by TS 3.5.2 be capable of automatic initiation and injection to the reactor vessel. The TSPS will be in effect for the short term including RF03. A modification to the TS will be considered by the licensee and evaluated following RF03. The licensee has committed to submit the evaluation and necessary TS changes to the NRC by September 22, 1989.

Thus, we conclude that draining the water from the reactor cavity with an inoperable ECCS subsystem is acceptable for RF03 because the remaining operable subsystem, the LPCS, will be automatically actuated upon low reactor vessel water level. Accordingly, the requested exception to TS 3.0.4 for TS 3.5.2, AS a, is acceptable.

The licensee also requested TS 3.0.4 exceptions for TS 3.9.11.2, AS a and b; TS 3.7.1.3, AS a; and TS 3.7.1.1, AS c and d, because during the drain down, only RHR shutdown cooling loop A will be operable. TS 3.9.11.2 LCO requires two operable RHR shutdown cooling loops. RHR loop B will be inoperable due to maintenance on the loop. The ADHRS is proposed as the alternate method for removing decay heat. The ADHRS is powered by offsite power only. However, its use, as proposed here, is acceptable because it would replace RHR shutdown cooling loop B, which would also be powered by offsite power, because the Division II diesel generator would be undergoing maintenance.

We conclude that draining water from the reactor cavity with an inoperable RHR shutdown cooling loop is acceptable because the ADHRS is equivalent to the inoperable RHR B loop it would replace in that both would be powered by offsite power. Accordingly, the proposed changes to TS 3.9.11.2, AS a and b, TS 3.7.1.3, AS a, and TS 3.7.1.1, AS c and d, are acceptable for this activity.

2.3 Drain water from reactor cavity with one inoperable RHR loop

This activity is similar to that described in Section 2.2, except in this drain down there will be two ECCS subsystems operable so that an exception to TS 3.5.2 is not requested. The licensee requested TS 3.0.4 exceptions for TS 3.9.11.2, AS a and b; TS 3.7.1.3, AS a; and TS 3.7.1.1, AS c and d, because during the drain down only RHR shutdown cooling loop A will be operable. The TS 3.9.11.2 LCO requires two operable RHR shutdown cooling loops. RHR loop B and the associated SSW subsystem and the associated ultimate heat sink (UHS) basin will be inoperable because basin water level will be less than that required in the TS 3.7.1.3 LCO. This basin water level is normally required so that a 30-day water supply will be available following an accident. The basin water level will be lowered for cleaning and maintenance of the basin. The licensee proposed to use RHR loop B with a reduced water level in the basin as the alternate method capable of decay heat removal required by TS 3.9.11.2, AS a. By letter dated March 3, 1989, the licensee provided a summary of procedures and a safety analysis to demonstrate that water level in the basin would be kept to a level adequate to meet SSW pump net pump suction head requirements and that an adequate water supply to the basin would be available. We conclude that this alternate method for decay heat removal is acceptable because (1) the only difference between the proposed alternate method and the operable RHR loop B is the lower water level in the UHS basin and (2) procedures will be in place to assure adequate NPSH and an adequate water supply to the UHS basin for the plant conditions.

Accordingly, the proposed changes to TS 3.9.11.2, AS a and b; TS 3.7.1.3, AS a; and TS 3.7.1.1, AS c and d, are acceptable for this activity.

2.4 Retensioning bolts in the RPV head with one inoperable RHR loop

This activity results in going from OC 5 to OC 4 with a low reactor cavity water level. TS 3.4.9.2 LCO requires two operable RHR loops. RHR loop A will be operable and the TS 3.7.1.1 LCO requires associated SSW subsystems to be operable. RHR loop B and the associated SSW subsystem will be inoperable due to a low water level in the UHS basin. RHR B loop will be the alternate means for shutdown cooling required by AS a. As discussed in Section 2.3 of this safety evaluation, this alternate means is acceptable because procedures will be in place to assure adequate NPSH for the SSW pump and an adequate water supply to the UHS basin.

Accordingly, the proposed changes to TS 3.4.9.2, AS a, and TS 3.7.1.1, AS b are acceptable for this activity.

2.5 Alternate decay heat removal system (ADHRS) installation and operation

The installation of the new ADHRS and its use during RF03 would result in one division of the suppression pool water level instrumentation being inoperable. This is due to the requirement for RHR C jockey pump to be out-of-service when the ADHRS is installed and operated. This pump keeps the reference leg filled for one division of suppression pool water level instrumentation. The licensee has requested a one-time TS 3.0.4 exception for TS 3.5.3, AS c, for use during RF03. By letter dated March 3, 1989, the licensee committed to evaluate actions necessary to prevent this adverse interaction of ADHRS operation on the suppression pool level instrumentation.

When one division of the suppression pool level instrumentation is inoperable TS 3.5.3 requires the level be verified at least once per 12 hours. For this one time, use of ADHRS visual inspection of the actual pool water level will be performed once per 12 hours. Other planned activities during this interval of the outage do not affect suppression pool inventory. We conclude that the alternate means of determining suppression pool level for this activity is acceptable.

Accordingly, the proposed change to TS 3.5.3, AS c, is acceptable.

2.6 Containment and drywell isolation valves maintenance

The licensee has requested an exception to TS 3.0.4 for TS 3.6.4, AS b and c, for the purpose of maintenance, testing and inspection of containment and drywell isolation valves. During this interval of the outage, the plant will be in OC 5. Other activities during these intervals will include core alterations, handling irradiated fuel, and work on the reactor pressure vessel bottom drain line. The number of valves allowed to be inoperable at any one time would be limited to 10 valves. The requirements of AS b and c would be met to maintain

isolation of each penetration during this activity. In addition, changes in plant operational conditions would not be allowed during the time isolation valves are reopened under administrative controls as allowed by the present * footnote in TS 3.6.4.

Therefore, we conclude that the proposed changes to TS 3.6.4, AS b and c, and footnote * are acceptable because these action statements, as modified, would maintain containment and drywell integrity during the time the valves are being worked on and tested.

2.7 Secondary containment isolation dampers and valves maintenance

The licensee has requested an exception for TS 3.6.6.2, AS b and c, for the purpose of maintenance of secondary containment isolation dampers and valves. The requirements of AS b and c would be met to maintain secondary containment integrity. The number of isolation dampers and valves allowed to be inoperable at any one time would be limited to 10.

We conclude that the proposed changes to TS 3.6.6.2, AS b and c, are acceptable because these action statements as modified would maintain secondary containment while the valves and dampers are worked on and tested.

2.8 Control room emergency filtration system maintenance and testing

Maintenance on the control room emergency filtration system will result in the inoperability of both subsystems, because maintenance is planned on the isolation valves in the common fresh air inlet and the common purge line. AS a.1 requires an inoperable subsystem to be placed in the isolation mode of operation. Since both subsystems will be inoperable, the licensee would place both subsystems in the isolation mode and one of the systems in operation. Plant procedures require cessation of any painting in the vicinity of the system inlet duct to preclude clogging of the charcoal and decreasing the iodine removal efficiency of the filters. The licensee has requested a TS 3.0.4 exception for TS 3.7.2, AS a.1, during this maintenance activity. We conclude that the requested TS exceptions are acceptable because the filtration system will be capable of performing its safety function in the event of an accident during this activity.

2.9 Summary

The proposed exceptions to TS 3.0.4 are acceptable, as requested, during RF03 because the compensatory measures described in this safety evaluation are acceptable alternatives to meeting the LCO requirements.

The new ADHRS to be installed and used during RF03 causes some adverse interactions with other systems required to be operable during cold shutdown and refueling. The licensee has committed to determine actions necessary to prevent these adverse interactions for the long term.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment changes 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. 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 off site; 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 or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

The Commission made a proposed determination that this amendment involves no significant hazards consideration, which was published in the Federal Register (54 FR 6199) on February 8, 1989, and consulted with the State of Mississippi. No public comments or requests for hearing were received, and the State of Mississippi did not have any comments.

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 the security, or to the health and safety of the public.

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