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

August 13, 2024

Ronald Gaston
Vice President, Regulatory Assurance
Entergy Services, LLC
M-ECH-29
1340 Echelon Parkway
Jackson, MS 39213

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2; GRAND GULF NUCLEAR STATION, UNIT 1; AND RIVER BEND STATION, UNIT 1 – ISSUANCE OF AMENDMENT NOS. 334, 235, AND 215, RESPECTIVELY, TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-205, REVISION 3, "REVISION OF CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST, AND RELATED DEFINITIONS" (EPID L-2023-LLA-0101)

Dear Ronald Gaston:

The U.S. Nuclear Regulatory Commission (the Commission) has issued amendments consisting of changes to the technical specifications (TSs) in response to your application dated July 27, 2023. The following amendments are enclosed:

- Amendment No. 334 to Renewed Facility Operating License No. NPF-6 for Arkansas Nuclear One, Unit 2 (ANO-2);

- Amendment No. 235 to Renewed Facility Operating License No. NPF-29 for Grand Gulf Nuclear Station, Unit 1 (Grand Gulf); and

- Amendment No. 215 to Renewed Facility Operating License No. NPF-47 for River Bend Station, Unit 1 (River Bend).

The amendments revise ANO-2 TS 1.9 and 1.11 defining Channel Calibration and Channel Functional Test, respectively; Grand Gulf TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test; and River Bend TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test. The proposed changes will align the ANO-2, Grand Gulf, and River Bend TS definitions with the definitions in the Technical Specifications Task Force (TSTF) Traveler TSTF-205-A, Revision 3, "Revision of Channel Calibration, Channel Functional Test, and Related Definitions."

The reason for the proposed change is to add clarity to the Definitions section to eliminate a current ambiguity and possible misinterpretation.

A copy of the related Safety Evaluation is also enclosed. Notice of Issuance will be included in the Commission's monthly *Federal Register* notice.

Sincerely,

/RA/

Mahesh L. Chawla, Project Manager
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-368, 50-416, and
50-458

Enclosures:
1. Amendment No. 334 to NPF-6
2. Amendment No. 235 to NPF-29
3. Amendment No. 215 to NPF-47
4. Safety Evaluation
5. Notice and Environmental Finding

cc: Listserv

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

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-368

ARKANSAS NUCLEAR ONE, UNIT 2

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 334
Renewed License No. NPF-6

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 27, 2023, 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 Renewed Facility Operating License No. NPF-6 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 334, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

SAMSON LEE

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Date: 2024.08.13 15:24:36 -04'00'

Jennivine K. Rankin, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-6
and the Technical Specifications

Date of Issuance: August 13, 2024

ATTACHMENT TO LICENSE AMENDMENT NO. 334

RENEWED FACILITY OPERATING LICENSE NO. NPF-6

ARKANSAS NUCLEAR ONE, UNIT 2

DOCKET NO. 50-368

Replace the following pages of Renewed Facility Operating License No. NPF-6 and 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.

Operating License

REMOVE	INSERT
-3-	-3-

Technical Specifications

REMOVE	INSERT
1-2	1-2
1-3	1-3

(4) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) EOI, pursuant to the Act and 10 CFR Parts 30, 40 and 70 to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) EOI, pursuant to the Act and 10 CFR Parts 30 and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This renewed license shall be deemed to contain and is subject to conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

EOI is authorized to operate the facility at steady state reactor core power levels not in excess of 3026 megawatts thermal. Prior to attaining this power level EOI shall comply with the conditions in Paragraph 2.C.(3).

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 334, are hereby incorporated in the renewed license. The licensee shall operate the facility in accordance with the Technical Specifications.

Exemptive 2nd paragraph of 2.C.2 deleted per Amendment 20, 3/3/81.

(3) Additional Conditions

The matters specified in the following conditions shall be completed to the satisfaction of the Commission within the stated time periods following issuance of the renewed license or within the operational restrictions indicated. The removal of these conditions shall be made by an amendment to the renewed license supported by a favorable evaluation by the Commission.

2.C.(3)(a) Deleted per Amendment 24, 6/19/81.

CONTAINMENT INTEGRITY

1.8 CONTAINMENT INTEGRITY shall exist when:

1.8.1 All penetrations required to be closed during accident conditions are either:

a. Capable of being closed by an OPERABLE containment automatic isolation valve system, or

b. Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except for valves that are open under administrative control as permitted by Specification 3.6.3.1.

1.8.2 All equipment hatches are closed and sealed,

1.8.3 Each airlock is OPERABLE pursuant to Specification 3.6.1.3,

1.8.4 The containment leakage rates are within the limits of Specification 3.6.1.2, and

1.8.5 The sealing mechanism associated with each penetration (e.g., welds, bellows or O-rings) is OPERABLE.

CHANNEL CALIBRATION

1.9 A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

CHANNEL CHECK

1.10 A CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST

1.11 A CHANNEL FUNCTIONAL TEST shall be:

a. Analog channels – The injection of a simulated signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.

b. Bistable channels – The injection of a simulated signal into the sensor to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.

c. Digital computer channels – The exercising of the digital computer hardware using diagnostic programs and the injection of simulated process data into the channel to verify OPERABILITY of all devices in the channel required for channel OPERABILITY.

The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.

SHUTDOWN MARGIN

1.13 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all control element assemblies are fully inserted except for the single assembly of highest reactivity worth which is assumed to be fully withdrawn.

IDENTIFIED LEAKAGE

1.14 IDENTIFIED LEAKAGE shall be:

a. Leakage (except controlled leakage) into closed systems, such as pump seal or valve packing leaks that are captured, and conducted to a sump or collecting tank, or

b. Leakage into the containment atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems, or

c. Reactor coolant system leakage through a steam generator to the secondary system (primary to secondary leakage).

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

ENTERGY OPERATIONS, INC.

SYSTEM ENERGY RESOURCES, INC.

COOPERATIVE ENERGY, A MISSISSIPPI ELECTRIC COOPERATIVE

ENTERGY MISSISSIPPI, LLC

DOCKET NO. 50-416

GRAND GULF NUCLEAR STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 235
Renewed License No. NPF-29

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 27, 2023, 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 Renewed 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. 235 are hereby incorporated into this renewed license. Entergy Operations, 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 and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

SAMSON LEE

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Jennivine K. Rankin, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility
Operating License No. NPF-29 and
the Technical Specifications

Date of Issuance: August 13, 2024

ATTACHMENT TO LICENSE AMENDMENT NO. 235

RENEWED FACILITY OPERATING LICENSE NO. NPF-29

GRAND GULF NUCLEAR STATION, UNIT 1

DOCKET NO. 50-416

Replace the following pages of Renewed Facility Operating License No. NPF-29 and 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.

Facility Operating License

REMOVE	INSERT
-4-	-4-

Technical Specifications

REMOVE	INSERT
1.0-1	1.0-1
1.0-2	1.0-2
1.0-4	1.0-4
1.0-5	1.0-5

amended, are fully applicable to the lessors and any successors in interest to those lessors, as long as the renewed license of GGNS Unit 1 remains in effect.

(b) SERI is required to notify the NRC in writing prior to any change in (i) the terms or conditions of any new or existing sale or lease agreements executed as part of the above authorized financial transactions, (ii) the GGNS Unit 1 operating agreement, (iii) the existing property insurance coverage for GGNS Unit 1 that would materially alter the representations and conditions set forth in the Staff's Safety Evaluation Report dated December 19, 1988 attached to Amendment No. 54. In addition, SERI is required to notify the NRC of any action by a lessor or other successor in interest to SERI that may have an effect on the operation of the facility.

C. The renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

Entergy Operations, Inc. is authorized to operate the facility at reactor core power levels not in excess of 4408 megawatts thermal (100 percent power) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, as revised through Amendment No. 235 are hereby incorporated into this renewed license. Entergy Operations, Inc. shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

During Cycle 19, GGNS will conduct monitoring of the Oscillation Power Range Monitor (OPRM). During this time, the OPRM Upscale function (Function 2.f of Technical Specification Table 3.3.1.1-1) will be disabled and operated in an "indicate only" mode and technical specification requirements will not apply to this function. During such time, Backup Stability Protection measures will be implemented via GGNS procedures to provide an alternate method to detect and suppress reactor core thermal hydraulic instability oscillations. Once monitoring has been successfully completed, the OPRM Upscale function will be enabled and technical specification requirements will be applied to the function; no further operating with this function in an "indicate only" mode will be conducted.

1.0 USE AND APPLICATION

1.1 Definitions

----------NOTE----------
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

(continued)

1.1 Definitions (continued)

CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall

(continued)

1.1 Definitions (continued)

LEAKAGE	LEAKAGE shall be: a. Identified LEAKAGE 1. LEAKAGE into the drywell such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; b. Unidentified LEAKAGE All LEAKAGE into the drywell that is not identified LEAKAGE; c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; d. Pressure Boundary LEAKAGE LEAKAGE through a fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE.
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential,

(continued)

1.1 Definitions

LOGIC SYSTEM FUNCTIONAL TEST (continued)	overlapping, or total system steps so that the entire logic system is tested.
MINIMUM CRITICAL POWER RATIO (MCPR)	The MCPR shall be the smallest critical power ratio (CPR) that exists in the core for each class of fuel. The CPR is that power in the assembly that is calculated by application of the appropriate correlation(s) to cause some point in the assembly to experience boiling transition, divided by the actual assembly operating power.
MODE	A MODE shall correspond to any one inclusive combination of mode switch position, average reactor coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.
OPERABLE-OPERABILITY	A system, subsystem, division, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified safety function(s) and when all necessary attendant instrumentation, controls, normal or emergency electrical power, cooling and seal water, lubrication, and other auxiliary equipment that are required for the system, subsystem, division, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PRESSURE TEMPERATURE LIMITS REPORT (PTLR)	The PTLR is the unit-specific document that provides the reactor vessel pressure and temperature limits, including heatup and cooldown rates, for the current reactor vessel fluence period. These pressure and temperature limits shall be determined for each fluence period in accordance with Specification 5.6.6.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the reactor coolant of 4408 MWt.
REACTOR PROTECTION SYSTEM (RPS) RESPONSE TIME	The RPS RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its RPS trip setpoint at the channel sensor until de-energization of the scram pilot valve solenoids. The response time may be measured by means of any series of sequential, overlapping, or total steps so that the entire response time is measured.

(continued)

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

ENTERGY LOUISIANA, LLC

AND

ENTERGY OPERATIONS, INC.

DOCKET NO. 50-458

RIVER BEND STATION, UNIT 1

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

Amendment No. 215
Renewed License No. NPF-47

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

   A. The application for amendment by Entergy Operations, Inc. (the licensee), dated July 27, 2023, 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, as amended, 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 Renewed Facility Operating License No. NPF-47 is hereby amended to read as follows:

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 215 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. The license amendment is effective as of its date of issuance and shall be implemented within 90 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

SAMSON LEE

Digitally signed by SAMSON LEE
Date: 2024.08.13 15:26:13 -04'00'

Jennivine K. Rankin, Chief
Plant Licensing Branch IV
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Attachment:
Changes to Renewed Facility Operating License No. NPF-47 and the Technical Specifications

Date of Issuance: August 13, 2024

ATTACHMENT TO LICENSE AMENDMENT NO. 215

RENEWED FACILITY OPERATING LICENSE NO. NPF-47

RIVER BEND STATION, UNIT 1

DOCKET NO. 50-458

Replace the following pages of Renewed Facility Operating License No. NPF-47 and 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.

Facility Operating License

Remove	Insert
-3-	-3-

Technical Specifications

Remove	Insert
1.0-1	1.0-1
1.0-2	1.0-2
1.0-4	1.0-4

(2) EOI, pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use and operate the facility at the above designated location in accordance with the procedures and limitations set forth in this renewed license;

(3) EOI, pursuant to Section 103 of the Act and 10 CFR Part 70, to receive, possess and to use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(4) EOI, pursuant to Section 103 of the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(5) EOI, pursuant to Section 103 of the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components; and

(6) EOI, pursuant to Section 103 of the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

(7) EOI, pursuant to the Act and 10 CFR Part 30, 40, and 70 to receive, possess and use, in amounts as required, such byproduct and special nuclear materials as may be produced by the operation of Arkansas Nuclear One, Units 1 and 2, Grand Gulf Nuclear Station, Unit 1, River Bend Station, Unit 1, and Waterford Steam Electric Station, Unit 3, without restriction to chemical or physical form for the purposes of sample analysis, equipment calibration, or equipment repair.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and the rules, regulations and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

EOI is authorized to operate the facility at reactor core power levels not in excess of 3091 megawatts thermal (100% rated power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 215 and the Environmental Protection Plan contained in Appendix B, are hereby incorporated in the renewed license. EOI shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

1.0 USE AND APPLICATION

1.1 Definitions

----------NOTE----------
The defined terms of this section appear in capitalized type and are applicable throughout these Technical Specifications and Bases.

Term	Definition
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE PLANAR LINEAR HEAT GENERATION RATE (APLHGR)	The APLHGR shall be applicable to a specific planar height and is equal to the sum of the LHGRs for all the fuel rods in the specified bundle at the specified height divided by the number of fuel rods in the fuel bundle.
CHANNEL CALIBRATION	A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY and the CHANNEL FUNCTIONAL TEST. Calibration of instrument channels with resistance temperature detector (RTD) or thermocouple sensors may consist of an inplace qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel. The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CHANNEL CHECK	A CHANNEL CHECK shall be the qualitative assessment, by observation, of channel behavior during operation. This determination shall include, where possible, comparison of the channel indication and status to other indications or status derived from independent instrument channels measuring the same parameter.

(continued)

1.1 Definitions (continued)

CHANNEL FUNCTIONAL TEST	A CHANNEL FUNCTIONAL TEST shall be the injection of a simulated or actual signal into the channel as close to the sensor as practicable to verify OPERABILITY of all devices in the channel required for channel OPERABILITY. The CHANNEL FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total channel steps, and each step must be performed within the Frequency in the Surveillance Frequency Control Program for the devices included in the step.
CORE ALTERATION	CORE ALTERATION shall be the movement of any fuel, sources, or reactivity control components within the reactor vessel with the vessel head removed and fuel in the vessel. The following exceptions are not considered to be CORE ALTERATIONS: a. Movement of source range monitors, local power range monitors, intermediate range monitors, traversing incore probes, or special movable detectors (including undervessel replacement); and b. Control rod movement provided there are no fuel assemblies in the associated core cell. Suspension of CORE ALTERATIONS shall not preclude completion of movement of a component to a safe position.
CORE OPERATING LIMITS REPORT (COLR)	The COLR is the unit specific document that provides cycle specific parameter limits for the current reload cycle. These cycle specific limits shall be determined for each reload cycle in accordance with Specification 5.6.5. Plant operation within these limits is addressed in individual Specifications.
DOSE EQUIVALENT I-131	DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microcuries/gram) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Federal Guidance Report (FGR) 11, “Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion,” 1989.

(continued)

1.1 Definitions (continued)

LEAKAGE	LEAKAGE shall be: a. Identified LEAKAGE 1. LEAKAGE into the drywell such as that from pump seals or valve packing, that is captured and conducted to a sump or collecting tank; or 2. LEAKAGE into the drywell atmosphere from sources that are both specifically located and known to not interfere with the operation of leakage detection systems; b. Unidentified LEAKAGE All LEAKAGE into the drywell that is not identified LEAKAGE; c. Total LEAKAGE Sum of the identified and unidentified LEAKAGE; d. Pressure Boundary LEAKAGE LEAKAGE through a fault in a Reactor Coolant System (RCS) component body, pipe wall, or vessel wall. LEAKAGE past seals, packing, and gaskets is not pressure boundary LEAKAGE
LINEAR HEAT GENERATION RATE (LHGR)	The LHGR shall be the heat generation rate per unit length of fuel rod. It is the integral of the heat flux over the heat transfer area associated with the unit length.
LOGIC SYSTEM FUNCTIONAL TEST	A LOGIC SYSTEM FUNCTIONAL TEST shall be a test of all required logic components required for OPERABILITY of a logic circuit, from as close to the sensor as practicable up to, but not including, the actuated device, to verify OPERABILITY. The LOGIC SYSTEM FUNCTIONAL TEST may be performed by means of any series of sequential, overlapping, or total system steps so that the entire logic system is tested.

(continued)

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO

AMENDMENT NO. 334 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-6

AMENDMENT NO. 235 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-29

AMENDMENT NO. 215 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT 2

GRAND GULF NUCLEAR STATION, UNIT 1

RIVER BEND STATION, UNIT 1

DOCKET NOS. 50-368, 50-416 AND 50-458

Application	Safety Evaluation Date
• July 27, 2023, ML23208A211	August 13, 2024
	Principal Contributor to Safety Evaluation
	• Tarico Sweat

1.0 PROPOSED CHANGE

Entergy Operations Inc. (the licensee) requested changes to the technical specifications (TSs) for Arkansas Nuclear One, Unit 2 (ANO-2); Grand Gulf Nuclear Station, Unit 1 (Grand Gulf); and River Bend Station, Unit 1 (River Bend) by license amendment request (LAR, application) dated July 27, 2023.

The proposed amendments would revise ANO-2 TS 1.9 and 1.11 defining Channel Calibration and Channel Functional Test, respectively; Grand Gulf TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test; and River Bend TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test. The proposed changes will align the ANO-2, Grand Gulf, and River Bend TS definitions with the definitions in Technical Specifications Task Force (TSTF) Traveler TSTF-205-A, Revision 3, “Revision of Channel Calibration, Channel Functional Test, and Related Definitions.” Additionally, the Logic System Functional Test definition is further revised to eliminate the requirement of the logic

system functional test to continue through to the actuating device at the end of the logic sequence.

The reason for the proposed changes is to add clarity to the definitions section to eliminate a current ambiguity and possible misinterpretation.

1.1 Proposed TS Changes to Adopt TSTF-205-A

In accordance with U.S. Nuclear Regulatory Commission (NRC or the Commission) staff-approved TSTF-205-A, the licensee proposed changes that would revise the definitions related to channel calibration, channel functional test, and logic system functional test in the ANO-2, Grand Gulf, and River Bend TSs. Specifically, the licensee proposed the following changes to adopt TSTF-205-A:

ANO-2

- TS 1.9, Channel Calibration definition would be revised to delete, “the entire channel including the sensor and alarm and/or trip functions, and shall include” and replace it with “all devices in the channel required for channel OPERABILITY and”; and

- TS 1.11a. and 1.11b., Channel Functional Test definitions for analog channels and bistable channels, respectively, would be revised to delete “including alarm and/or trip functions” and replace it with “of all devices in the channel required for channel OPERABILITY.”

- TS 1.11c., Channel Functional Test definition for digital computer channels would be revised to add “of all devices in the channel required for channel OPERABILITY” to the end of definition 1.11c.

Grand Gulf

- TS 1.1, Channel Calibration definition would be revised to delete “the entire channel, including the required sensor, alarm, display, and trip functions, and shall include” and replace it with “all devices in the channel required for channel OPERABILITY and”, and to delete “so that the entire channel is calibrated”;

- TS 1.1, Channel Functional Test definition would be revised to delete, “including required alarm, interlock, display, and trip functions, and channel failure trips” and replace it with “of all devices in the channel required for channel OPERABILITY”, and to delete “so that the entire channel is tested”; and

- TS 1.1, Logic System Functional Test definition would be revised to delete “(i.e., all required relays and contacts, trip units, solid state logic elements, etc.)” and replace it with “required for OPERABILITY.”

River Bend

- TS 1.1, Channel Calibration definition would be revised to delete “the entire channel, including the required sensor, alarm, display, and trip functions, and shall include” and replace it with “all devices in the channel required for channel OPERABILITY and”, and to delete “so that the entire channel is calibrated”;

- TS 1.1, Channel Functional Test definition would be revised to delete, “including required alarm, interlock, display, and trip functions, and channel failure trips” and replace it with “of all devices in the channel required for channel OPERABILITY”, and to delete “so that the entire channel is tested”;

- TS 1.1, Logic System Functional Test definition would be revised to delete, “(i.e., all required relays and contacts, trip units, solid state logic elements, etc.)” and replace it with “required for OPERABILITY.”

1.2 Variations

The licensee has proposed the following variations, which are listed as deviations in section 3.1 of the licensee’s application dated July 27, 2023.

ANO-2

- The definitions section of the ANO-2 TSs is numbered for each individual definition. The definition for Channel Calibration is numbered 1.9. The definition for Channel Functional Test is numbered 1.11. The definitions within the standard technical specifications (STS) are not numbered and are listed individually under section 1.1.

- ANO-2 has adopted TSTF-563 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20041F035), which modified the definitions for channel calibration and channel functional test.

- The ANO-2 TSs separate the analog channels and bistable channels into two items within definition 1.11 for Channel Functional Test. The STS combine both analog and bistable channels into a single item.

- The definition for digital computer channels for a channel functional test is different than that contained in the STS. The proposed wording from TSTF-205 is applied to the existing ANO-2 TS definition with minor editorial modification.

- The TS Bases changes related to instrumentation are not applicable to ANO-2 and no changes will be made.

Grand Gulf

- Grand Gulf has adopted TSTF-563 (ML21146A018), which modified the definition for both channel calibration and channel functional test.

- The proposed changes to TS Bases will be made to the appropriate numbered surveillance requirements (SRs) within the Grand Gulf TS Bases.

- An editorial correction is made to Grand Gulf TS 1.0-5, in the footer, to remove an errant underline from previous Amendment No. 156.

- An editorial correction is made to the definition of “Operable – Operability” on page 1.0-5 to correct an error introduced when issuing previous Amendment No. 191.

River Bend

- River Bend has adopted TSTF-563 (ML21146A018), which modified the definition for both channel calibration and channel functional test.

- The changes to the TS Bases will be made to the appropriate SR within the River Bend TS Bases to align with the approved TSTF-205.

2.0 REGULATORY EVALUATION

The regulation at Title 10 of the *Code of Federal Regulations* (10 CFR) 50.36(c)(3) requires that TSs include SRs, which are requirements "relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met."

The NRC staff's guidance for the review of TSs is in Chapter 16.0, Revision 3, "Technical Specifications," of NUREG-0800, "Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR [Light-Water Reactor] Edition" (SRP), March 2010 (ML100351425). As described therein, as part of the regulatory standardization effort, the NRC staff has prepared STSs for each of the LWR nuclear designs. Accordingly, the NRC staff's review includes consideration of whether the proposed changes are consistent with "Standard Technical Specifications, General Electric, BWR [Boiling Water Reactor]/6 Plants," NUREG-1434, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5.0, April 2021 (ML21271A582 and ML21271A596, respectively) and "Standard Technical Specifications, Combustion Engineering Plants," NUREG-1432, Volume 1, "Specifications," and Volume 2, "Bases," Revision 5.0, April 2021 (ML21258A421 and ML21258A424, respectively) as modified by NRC-approved travelers.

3.0 TECHNICAL EVALUATION

TSTF-205-A, Revision 3, changes revised definitions for channel calibration, channel functional test, and logic system functional test in the improved STSs to remove potential ambiguity in what constitutes an acceptable test.

TS Section 1.0 includes definitions for instrumentation testing requirements. In accordance with 10 CFR 50.36(c)(3), SRs are "requirements relating to test, calibration, or inspection to assure that the necessary quality of systems and components is maintained, that facility operation will be within safety limits, and that the limiting conditions for operation will be met." The definitions of channel calibration, channel functional test, and logic system functional test establish requirements for conducting testing, including what the test involves, the scope of components that the test encompasses, and instructions on how the test is to be performed. The terms defined in TS Section 1.0 are referenced throughout instrumentation TS SRs to help assure consistent performance of SRs.

In its LAR, the licensee proposed to adopt TSTF-205-A, Revision 3, TS changes to the definitions of channel calibration, channel functional test, and logic system functional test to eliminate current ambiguity and possible misinterpretations of testing requirements.

The current definitions for channel calibration, channel functional test, and logic system functional test use the phrases "the entire channel including the required sensor, alarm, display,

and/or trip functions," and "including required alarm, interlock, display, and/or trip functions and channel failure trips" to describe those instrument channel devices required to be included for specified tests. There is ambiguity in whether the list is inclusive of all devices that must be tested or whether the list is representative of devices to be tested. Thus, the licensee adopted proposed changes from TSTF-205-A, Revision 3, which replace the string of required instrument channel devices in the definitions discussed above with "all devices in the channel required for channel OPERABILITY."

The revised channel functional test definition does not address the method for conducting testing of all required channel devices. The NRC staff position is that a successful test of the required contact(s) of a channel relay may be performed by the verification of the change of state of a single contact of the relay. This clarifies what is an acceptable channel functional test of a relay and is acceptable because all the other required contacts of the relay are verified by other TS and non-TS tests at least once per refueling interval with applicable extensions.

The licensee is proposing to adopt the approved TSTF-205-A, Revision 3, Bases to clarify testing requirements by modifying the Bases of applicable surveillances to provide acceptable methods of testing.

In addition, the current definition for Channel Calibration in the Grand Gulf and River Bend TSs specifies that testing may be "performed by means of any series of sequential, overlapping or total channel steps … so that the entire channel is calibrated" and the definition for Channel Functional Test specifies that testing may be "performed by means of any series of sequential, overlapping or total channel steps … so that the entire channel is tested." The proposed TS deletes the phrase "so that the entire channel is calibrated" from the Grand Gulf and River Bend TS definition of Channel Calibration and "so that the entire channel is tested" from the Grand Gulf and River Bend TS definition of Channel Functional Test to eliminate a verbatim conflict between the definitions and the TSTF-205-A, Revision 3, Bases, which state a successful test to be the verification of the change of state of a single contact of the relay.

The NRC staff reviewed the changes proposed by the licensee and finds them acceptable because they are compatible with the STSs, do not result in any substantive change in operating requirements, and are consistent with 10 CFR 50.36(c)(3). These changes will provide for a consistent application of the definitions, tests, and calibrations.

3.1 Variations

The licensee described variations from TSTF-205-A in Section 1.2 of the LAR. The NRC staff reviewed the proposed variations to the CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST, and LOGIC SYSTEM FUNCTIONAL TEST definitions and determined that they are acceptable because the changes are consistent with the NUREG-1432 and NUREG-1434 wording, and continue to meet the intent of TSTF-205-A, to eliminate a current ambiguity and possible misinterpretation of Channel Calibration, Channel Functional Test, and Logic System Functional Test.

During the review of this LAR, the NRC staff found that the Definition of "Operable – Operability" in section 1.1, "Definitions," on page 1.0-5 of the Renewed Facility Operating License NPF-29 for Grand Gulf contains an editorial error which mistakenly defines the word as "Operable C Operability." The staff has confirmed that this editorial error was inadvertently introduced when issuing Amendment No. 191 (ML121210020) for Grand Gulf and was not included in the licensee's original submittal dated September 8, 2010 (ML102660403), as supplemented.

The typographical error is addressed by correcting the error and replacing the current page 1.0-5 in conjunction with the issuance Amendment No. 235 of RFOL NPF-29 for Grand Gulf. The correction does not change any of the conclusions in the safety evaluations or no significant hazards consideration determination associated with Amendment No. 191 or Amendment No. 235.

4.0 CONCLUSION

The Commission 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) there is reasonable assurance that such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendments will not be inimical to the common defense and security or to the health and safety of the public.

NOTICES AND ENVIRONMENTAL FINDINGS

RELATED TO

AMENDMENT NO. 334 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-6

AMENDMENT NO. 235 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-29

AMENDMENT NO. 215 TO RENEWED FACILITY OPERATING LICENSE NO. NPF-47

ENTERGY OPERATIONS, INC.

ARKANSAS NUCLEAR ONE, UNIT 2

GRAND GULF NUCLEAR STATION, UNIT 1

RIVER BEND STATION, UNIT 1

DOCKET NOS. 50-368, 50-416 AND 50-458

Application	Safety Evaluation Date
• July 27, 2023, ML23208A211	August 13, 2024

1.0 INTRODUCTION

Entergy Operations Inc. (the licensee) requested changes to the technical specifications (TSs) for Arkansas Nuclear One, Unit 2 (ANO-2); Grand Gulf Nuclear Station, Unit 1 (Grand Gulf); and River Bend Station, Unit 1 (River Bend) by license amendment request (LAR, application) dated July 27, 2023. The proposed amendments would revise ANO-2 TS 1.9 and 1.11 defining Channel Calibration and Channel Functional Test, respectively; Grand Gulf TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test; and River Bend TS 1.1 defining Channel Calibration, Channel Functional Test, and Logic System Functional Test. The proposed changes will align the ANO-2, Grand Gulf, and River Bend TS definitions with the definitions in Technical Specifications Task Force (TSTF) Traveler TSTF-205-A, Revision 3, “Revision of Channel Calibration, Channel Functional Test, and Related Definitions.” Additionally, the logic system functional test definition is further revised to eliminate the requirement of the logic system functional test to continue through to the actuating device at the end of the logic sequence.

2.0 STATE CONSULTATION

In accordance with the Commission’s regulations, the Arkansas, Mississippi, and Louisiana State officials were notified of the proposed issuance of the amendments on June 20, 2024. The State officials had no comments.

3.0 ENVIRONMENTAL CONSIDERATION

The amendments change requirements with respect to installation or use of a facility components located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The US. Nuclear Regulatory Commission (the Commission) staff has determined that the amendments involve 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 amendments involve no significant hazards consideration, published in the *Federal Register* on October 3, 2023 (88 FR 68163), and there has been no public comment on such finding. Accordingly, the amendments meet 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 amendments.

SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 2; GRAND GULF NUCLEAR STATION, UNIT 1; AND RIVER BEND STATION, UNIT 1 – ISSUANCE OF AMENDMENT NOS. 334, 235, AND 215, RESPECTIVELY, TO REVISE TECHNICAL SPECIFICATIONS TO ADOPT TSTF-205, REVISION 3, "REVISION OF CHANNEL CALIBRATION, CHANNEL FUNCTIONAL TEST, AND RELATED DEFINITIONS" (EPID L-2023-LLA-0101) DATED AUGUST 13, 2024

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