



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

June 4, 2018

Vice President, Operations  
Entergy Nuclear Operations, Inc.  
Palisades Nuclear Plant  
27780 Blue Star Memorial Highway  
Covert, MI 49043-9530

SUBJECT: PALISADES NUCLEAR PLANT - ISSUANCE OF AMENDMENT REGARDING  
ADMINISTRATIVE CONTROLS FOR PERMANENTLY DEFUELED CONDITION  
(CAC NO. MG0021; EPID L-2017-LLA-0266)

Dear Sir or Madam:

The U.S. Nuclear Regulatory Commission (NRC or Commission) has issued the enclosed Amendment No. 266 to Renewed Facility Operating License No. DPR-20 for the Palisades Nuclear Plant (Palisades). The amendment consists of changes to the technical specifications (TSs) in response to your application dated July 27, 2017, as supplemented by letter dated December 19, 2017.

The amendment revises certain staffing and training requirements, reports, programs, and editorial changes in the TS Table of Contents; Section 1.0, "Use and Application," and Section 5.0, "Administrative Controls," that will no longer be applicable once Palisades is permanently defueled.

A copy of our related safety evaluation is also enclosed. The Notice of Issuance will be included in the Commission's biweekly *Federal Register* notice.

Sincerely,

A handwritten signature in black ink that reads "Scott P. Wall".

Scott P. Wall, Senior Project Manager  
Special Projects and Process Branch  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket No. 50-255

Enclosures:

1. Amendment No. 266 to DPR-20
2. Safety Evaluation

cc: ListServ



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

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-255

PALISADES NUCLEAR PLANT

AMENDMENT TO RENEWED FACILITY OPERATING LICENSE

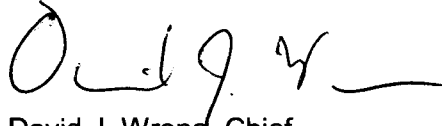
Amendment No. 266  
License No. DPR-20

1. The U.S. Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee), dated July 27, 2017, as supplemented by letter(s) dated December 19, 2017, 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;
  - 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 the license amendment and Paragraph 2.C.(2) of Renewed Facility Operating License No. DPR-20 is hereby amended to read as follows:

The Technical Specifications contained in Appendix A, as revised through Amendment No. 266, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. ENO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment becomes effective upon the licensee's submittal of the certifications required by 10 CFR 50.82(a)(1) and shall be implemented within 60 days from the amendment effective date.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in black ink, appearing to read 'D. J. Wrona', with a horizontal line extending to the right.

David J. Wrona, Chief  
Plant Licensing Branch III  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Attachment:  
Changes to the Renewed Facility  
Operating License No. DPR-20  
and Technical Specifications

Date of Issuance: June 4, 2018

ATTACHMENT TO LICENSE AMENDMENT NO. 266

RENEWED FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Replace the following page of the Renewed Facility Operating License No. DPR-20 with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

REMOVE

-3-

INSERT

-3-

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

REMOVE

1.1-1

1.1-4

1.1-5

1.1-6

5.0-1

5.0-2

5.0-3

5.0-4

5.0-5

5.0-6

5.0-21

5.0-31

INSERT

1.1-1

1.1-4

1.1-5

1.1-6

5.0-1

5.0-2

5.0-3

5.0-4

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5.0-21

5.0-31

- (1) Pursuant to Section 104b of the Act, as amended, and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," (a) ENP to possess and use, and (b) ENO to possess, use and operate, the facility as a utilization facility at the designated location in Van Buren County, Michigan, in accordance with the procedures and limitation set forth in this license;
  - (2) ENO, pursuant to the Act and 10 CFR Parts 40 and 70, to receive, possess, and use source and special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Updated Final Safety Analysis Report, as supplemented and amended;
  - (3) ENO, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use byproduct, source, and special nuclear material as sealed sources for reactor startup, reactor instrumentation, radiation monitoring equipment calibration, and fission detectors in amounts as required;
  - (4) ENO, 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 for sample analysis or instrument calibration, or associated with radioactive apparatus or components; and
  - (5) ENO, pursuant to 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 operations of the facility.
- C. This renewed operating license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations in 10 CFR Chapter I and is subject to all applicable provisions of the Act; 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) ENO is authorized to operate the facility at steady-state reactor core power levels not in excess of 2565.4 Megawatts thermal (100 percent rated power) in accordance with the conditions specified herein.
  - (2) The Technical Specifications contained in Appendix A, as revised through Amendment No. 266, and the Environmental Protection Plan contained in Appendix B are hereby incorporated in the license. ENO shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.
  - (3) Fire Protection  
ENO shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated December 12, 2012 and November 1, 2017, as supplemented by letters dated February 21, 2013, September 30, 2013, October 24, 2013, December 2, 2013, April 2, 2014, May 7,

1.0 USE AND APPLICATION

1.1 Definitions

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-----NOTE-----

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

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<u>Term</u>	<u>Definition</u>
ACTIONS	ACTIONS shall be that part of a Specification that prescribes Required Actions to be taken under designated Conditions within specified Completion Times.
AVERAGE DISINTEGRATION ENERGY - $\bar{E}$	$\bar{E}$ shall be the average (weighted in proportion to the concentration of each radionuclide in the primary coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half lives > 15 minutes, making up at least 95% of the total noniodine activity in the coolant.
AXIAL OFFSET (AO)	AO shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the incore monitoring system).
AXIAL SHAPE INDEX (ASI)	ASI shall be the power generated in the lower half of the core less the power generated in the upper half of the core, divided by the sum of the power generated in the lower and upper halves of the core (determined using the excore monitoring system).
CERTIFIED FUEL HANDLER	A CERTIFIED FUEL HANDLER is an individual who complies with provisions of the CERTIFIED FUEL HANDLER training and retraining program required by Specification 5.3.2.

1.1 Definitions

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LEAKAGE

LEAKAGE shall be:

a. Identified LEAKAGE

1. LEAKAGE, such as that from pump seals or valve packing (except Primary Coolant Pump seal water leakoff), that is captured and conducted to collection systems or a sump or collecting tank;
2. LEAKAGE into the containment atmosphere from sources that are both specifically located and known not to interfere with the operation of leakage detection systems and not to be pressure boundary LEAKAGE; and
3. Primary Coolant System (PCS) LEAKAGE through a Steam Generator to the Secondary System (primary to secondary LEAKAGE).

b. Unidentified LEAKAGE

All LEAKAGE (except Primary Coolant Pump seal leakoff) that is not identified LEAKAGE;

c. Pressure Boundary LEAKAGE

LEAKAGE (except primary to secondary LEAKAGE) through a nonisolable fault in an PCS component body, pipe wall, or vessel wall.

MODE

A MODE shall correspond to any one inclusive combination of core reactivity condition, power level, average primary coolant temperature, and reactor vessel head closure bolt tensioning specified in Table 1.1-1 with fuel in the reactor vessel.

NON-CERTIFIED OPERATOR

A NON-CERTIFIED OPERATOR is a non-licensed operator who complies with the qualification requirements of Specification 5.3.1.

## 1.1 Definitions

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OPERABLE - OPERABILITY	A system, subsystem, train, 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, train, component, or device to perform its specified safety function(s) are also capable of performing their related support function(s).
PHYSICS TESTS	PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the reactor core and related instrumentation. These tests are: <ol style="list-style-type: none"><li>Described in Chapter 13, Initial Tests and Operation, of the FSAR;</li><li>Authorized under the provisions of 10 CFR 50.59; or</li><li>Otherwise approved by the Nuclear Regulatory Commission.</li></ol>
QUADRANT POWER TILT (T <sub>q</sub> )	T <sub>q</sub> shall be the maximum positive ratio of the power generated in any quadrant minus the average quadrant power, to the average quadrant power.
RATED THERMAL POWER (RTP)	RTP shall be a total reactor core heat transfer rate to the primary coolant of 2565.4 MWt.
REFUELING BORON CONCENTRATION	REFUELING BORON CONCENTRATION shall be a Primary Coolant System boron concentration of $\geq 1720$ ppm and sufficient to assure the reactor is subcritical by $\geq 5\%$ $\Delta\rho$ with all control rods withdrawn.
SHUTDOWN MARGIN (SDM)	SDM shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming:



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## 1.1 Definitions

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SHUTDOWN MARGIN (SDM) (continued)	<p>a. All full length control rods (shutdown and regulating) are fully inserted except for the single rod of highest reactivity worth, which is assumed to be fully withdrawn. However, with all full length control rods verified fully inserted by two independent means, it is not necessary to account for a stuck rod in the SDM calculation. With any full length control rods not capable of being fully inserted, the reactivity worth of these rods must be accounted for in the determination of SDM; and</p> <p>b. There is no change in part length rod position.</p>
STAGGERED TEST BASIS	<p>A STAGGERED TEST BASIS shall consist of the testing of one of the systems, subsystems, channels, or other designated components during the interval specified by the Surveillance Frequency, so that all systems, subsystems, channels, or other designated components are tested during <math>n</math> Surveillance Frequency intervals, where <math>n</math> is the total number of systems, subsystems, channels, or other designated components in the associated function.</p>
THERMAL POWER	<p>THERMAL POWER shall be the total reactor core heat transfer rate to the primary coolant.</p>
TOTAL RADIAL PEAKING FACTOR ( $F_R^T$ )	<p><math>F_R^T</math> shall be the maximum ratio of the individual fuel pin power to the core average pin power integrated over the total core height, including tilt.</p>

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## 5.0 ADMINISTRATIVE CONTROLS

### 5.1 Responsibility

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5.1.1 The plant manager shall be responsible for overall facility operation and shall delegate in writing the succession for this responsibility during absences. |

The plant manager or designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect safe storage and maintenance of spent nuclear fuel. |

5.1.2 The shift manager shall be responsible for the shift command function. |

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## 5.0 ADMINISTRATIVE CONTROLS

### 5.2 Organization

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#### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for facility staff and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safe storage and handling of spent nuclear fuel.

- a. Lines of authority, responsibility and communication shall be established and defined for the highest management levels through intermediate levels to and including all facility organization positions. These relationships shall be documented, and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key positions, or in equivalent forms of documentation. These requirements and the plant specific equivalent of those titles referred to in these Technical Specifications shall be documented in the FSAR.
- b. The plant manager shall be responsible for overall facility safe operation and shall have control over those onsite activities necessary for safe storage and maintenance of spent nuclear fuel.
- c. A specified corporate officer shall have corporate responsibility for the safe storage and handling of spent nuclear fuel and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the facility to ensure safe management of spent nuclear fuel.
- d. The individuals who train the CERTIFIED FUEL HANDLERS and those who carry out radiation protection and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their ability to perform their assigned functions.

#### 5.2.2 Facility Staff

The facility staff organization shall include the following:

- a. Each duty shift shall be composed of at least one shift manager and one NON-CERTIFIED OPERATOR. The NON-CERTIFIED OPERATOR position may be filled by a CERTIFIED FUEL HANDLER.
- b. Oversight of fuel handling operations shall be provided by a CERTIFIED FUEL HANDLER.

## 5.2 Organization

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### 5.2.2 Facility Staff (continued)

- c. Shift crew composition may be less than the minimum requirement of 5.2.2a. for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements and all the following are met:
    - 1) No fuel movements are in progress, and
    - 2) No movement of loads over fuel are in progress, and
    - 3) No unmanned shift positions during shift turnover shall be permitted due to an incoming shift crew member being late or absent.
  - d. A radiation protection technician shall be on site during the movement of fuel and during the movement of loads over fuel. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
  - e. At least one person qualified to stand watch in the control room (NON-CERTIFIED OPERATOR or CERTIFIED FUEL HANDLER) shall be present in the control room when nuclear fuel is stored in the spent fuel pool.
  - f. The shift manager shall be a CERTIFIED FUEL HANDLER.
  - g. (Deleted)
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5.0 ADMINISTRATIVE CONTROLS

5.3 Facility Staff Qualifications

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- 5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI/ANS 3.1-1978 for comparable positions with exceptions specified in the Quality Assurance Program Manual (QAPM).
  - 5.3.2 A NRC approved training and retraining program for CERTIFIED FUEL HANDLERS shall be maintained.
  - 5.3.3 (Deleted)
  - 5.3.4 (Deleted)
  - 5.3.5 (Deleted)
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.4 Procedures

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5.4.1 Written procedures shall be established, implemented, and maintained covering the activities referenced below:

- a. The procedures applicable to the safe storage of spent nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978. |
  - b. (Deleted) |
  - c. Not used;
  - d. All programs specified in Specification 5.5.
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## 5.0 ADMINISTRATIVE CONTROLS

### 5.5 Programs and Manuals

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The following programs shall be established, implemented, and maintained:

#### 5.5.1 Offsite Dose Calculation Manual (ODCM)

- a. The ODCM shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the radiological environmental monitoring program; and
- b. The ODCM shall also contain (1) the radioactive effluent controls and radiological environmental monitoring activities and (2) descriptions of the information that should be included in the Radiological Environmental Operating Report, and Radioactive Effluent Release Report required by Specification 5.6.2 and Specification 5.6.3.
- c. Changes to ODCM:
  1. Shall be documented and records of reviews performed shall be retained. This documentation shall contain:
    - a. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the changes, and
    - b. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR 190, 10 CFR 50.36a, and 10 CFR 50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
  2. Shall become effective after approval by the plant manager.
  3. Shall be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.

## 5.5 Programs and Manuals

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### 5.5.15 Process Control Program

- a. The Process Control Program shall contain the current formula, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of the radioactive waste.
- b. Changes to the Process Control Program:
  1. Shall be documented and records of reviews performed shall be retained as required by the Quality Program. This documentation shall contain:
    - a) Sufficient information to support the change together with the appropriate analyses or evaluation justifying the change(s) and
    - b) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
  2. Shall become effective after approval by the plant manager. |



## 5.7 High Radiation Area

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- 5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation
- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
    1. All such door and gate keys shall be maintained under the administrative control of the shift manager, radiation protection manager, or his or her designee.
    2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.
  - b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
  - c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP, or equivalent, while performing radiation surveys in such areas, provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
  - d. Each individual or group entering such an area shall possess:
    1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
    2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, and with the means to communicate with and control every individual in the area, or



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 266 TO

RENEWED FACILITY OPERATING LICENSE NO. DPR-20

ENTERGY NUCLEAR OPERATIONS, INC.

PALISADES NUCLEAR PLANT

DOCKET NO. 50-255

1.0 INTRODUCTION

By application dated July 27, 2017 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML17208A428), as supplemented by letter dated December 19, 2017 (ADAMS Accession No. ML17353A148), Entergy Nuclear Operations, Inc., (Entergy or the licensee), requested changes to the technical specifications (TSs) for Palisades Nuclear Plant (Palisades). The proposed changes would revise certain staffing and training requirements, reports, programs, and editorial changes contained in the TS Sections 1.0, "Use and Application"; and 5.0, "Administrative Controls," that will no longer be applicable once Palisades is permanently defueled.

The supplemental letter dated December 19, 2017, provided additional information that clarified the application, did not expand the scope of the application as originally noticed, and did not change the U.S. Nuclear Regulatory Commission (NRC or Commission) staff's proposed no significant hazards consideration determination as published in the *Federal Register* on September 12, 2017 (82 FR 42847).

2.0 BACKGROUND

By letter dated January 4, 2017 (ADAMS Accession No. ML17004A062), as supplemented by letters dated September 28, 2017, and October 19, 2017 (ADAMS Accession No. ML17271A233 and ML17292A032), the licensee submitted notification of Permanent Cessation of Power Operations for Palisades. In these letters, Entergy provided notification to the NRC of its intent to permanently cease power operations no later than May 31, 2022. After certifications of permanent cessation of power operations and permanent removal of fuel from the reactor vessel for Palisades are submitted in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 82(a)(1)(i) and (ii), the 10 CFR Part 50 license will no longer authorize reactor operation or placement or retention of fuel in the reactor vessel. As a result, licensed reactor operators will no longer be required to support plant operating activities. Instead, Certified Fuel Handlers (CFHs) will perform activities associated with decommissioning and irradiated fuel handling and management. By letter dated August 21, 2017 (ADAMS

Accession No. ML17151A350), the NRC approved the CFH Training and Retraining Program for Palisades.

### 3.0 REGULATORY EVALUATION

The regulatory requirements and guidance that the NRC staff considered in its review of the license amendment request are:

- The regulations under 10 CFR 50.82(a)(1) require that when a licensee has determined to permanently cease operations that the licensee shall, within 30 days, submit a written certification to the NRC, consistent with the requirements of 10 CFR 50.4(b)(8), and once fuel has been permanently removed from the reactor vessel, the licensee shall submit a written certification to the NRC that meets the requirements of 10 CFR 50.4(b)(9).
- The regulations under 10 CFR 50.82(a)(2) state: "Upon docketing of the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel, or when a final legally effective order to permanently cease operations has come into effect, the 10 CFR part 50 license no longer authorizes operation of the reactor or emplacement or retention of fuel into the reactor vessel."
- The regulations under 10 CFR 50.36 establish the requirements for TSs. Paragraph 10 CFR 50.36(c)(5), Administrative Controls, identifies that an Administrative Controls section shall be included in the TSs and shall include provisions relating to organization and management, procedures, recordkeeping, review and audit, and reporting necessary to assure operation of the facility in a safe manner. This license amendment request is proposing changes to the Administrative Controls section, with conforming changes proposed to additional sections, consistent with the pending decommissioning status of the plant. This request applies the principles identified in 10 CFR 50.36(c)(6), Decommissioning, for a facility which has submitted certifications required by 50.82(a)(1) and proposes changes to the Administrative Controls appropriate for the Palisades permanently defueled condition. As 10 CFR 50.36(c)(6) states, this type of change should be considered on a case-by-case basis.
- The regulations under 10 CFR 50.54(m) establish the requirements for having Reactor Operators and Senior Reactor Operators (SROs) licensed in accordance with 10 CFR Part 55 based on plant conditions. Given the impending permanent cessation of operation for Palisades, the requirements of this section will no longer apply once the certifications required by 10 CFR 50.82(a)(1) have been docketed and it will be permissible to remove those positions from the TSs.
- The regulation under 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," requires the use of a Systems Approach to Training (SAT) for personnel positions, including Certified Fuel Handlers.

#### 4.0 TECHNICAL EVALUATION

The review of the changes is broken into the following sections: (1) Section 1.1, "Definitions," (2) Section 5.1, "Responsibility," (3) Section 5.2, "Organization," (4) Section 5.3, "Plant Staff Qualifications," (5) Section 5.4, "Procedures," (6) Section 5.5, "Programs and Manuals," and (7) Section 5.7, "High Radiation Area."

#### 4.1 Proposed Changes to TS Section 1.1, "Definitions"

##### Current TS Section 1.1

The current Palisades TS Section 1.1 does not have a definition for a CFH or a Non-Certified Operator.

##### Proposed Changes to TS Section 1.1

Entergy proposed to add the following two definitions to TS Section 1.1:

**CERTIFIED FUEL HANDLER**            A CERTIFIED FUEL HANDLER is an individual who complies with the provisions of the CERTIFIED FUEL HANDLER training and retraining program required by Specification 5.3.2.

**NON-CERTIFIED OPERATOR**        A NON-CERTIFIED OPERATOR is a non-licensed operator who complies with the qualification requirements of Specification 5.3.1.

##### NRC Staff Technical Evaluation of Proposed Changes to TS Section 1.1

The licensee proposed to modify TS Section 1.1 to include new definitions for a CFH and a Non-Certified Operator. The CFH Training and Retraining Program for Palisades was previously approved by the NRC staff on August 21, 2017 (ADAMS Accession No. ML17151A350). The proposed TS 5.3.2 (see Section 4.4 of this safety evaluation) states that an NRC-approved training and retraining program for CFHs shall be maintained. The NRC staff reviewed the proposed definition for a CFH and finds that it is acceptable as it conforms to the usage contained in the "Administrative Controls" section of the Palisades TS.

The terminology "Non-Certified Operator" is used in the proposed renamed TS 5.2.2, "Facility Staff." Also, the proposed renamed TS 5.3, "Facility Staff Qualifications," Section 5.3.1 defines qualification requirements that are applicable to all members of the facility staff, and therefore, extend to the Non-Certified Operator. The NRC staff reviewed the proposed definition for a Non-Certified Operator and finds that it is acceptable as it conforms to the usage contained in the "Administrative Controls" section of the Palisades TS.

##### NRC Staff Conclusion of Proposed Changes to TS Section 1.1

The NRC reviewed the proposed administrative changes to TS Section 1.1. The NRC staff finds the proposed changes to TS Section 1.1 acceptable since they conform to the usage of definitions contained in the "Administrative Controls" section of the Palisades TS.

#### 4.2 Proposed Changes to TS Section 5.1, "Responsibility"

##### Current TS Section 5.1

The current TS 5.1, "Responsibility," states:

- 5.1.1 The plant superintendent shall be responsible for overall plant operation and shall delegate in writing the succession to this responsibility during his absence.

The plant superintendent or his designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect nuclear safety.

- 5.1.2 The Shift Supervisor (SS) shall be responsible for the control room command function. During any absence of the SS from the control room while the plant is in MODE 1, 2, 3, or 4, an individual with an active Senior Reactor Operator (SRO) license shall be designated to assume the control room command function. During any absence of the SS from the control room while the plant is in MODE 5 or 6 an individual with an active SRO license or Reactor Operator (RO) license shall be designated to assume the control room command function.

##### Proposed Changes to TS Section 5.1

Entergy proposed the following change to TS 5.1.1:

The plant manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during absences.

The plant manager or designee shall approve, prior to implementation, each proposed test, experiment or modification to systems or equipment that affect safe storage and maintenance of spent nuclear fuel.

Entergy proposed the following change to TS 5.1.2:

The shift manager shall be responsible for the shift command function.

##### NRC Staff Technical Evaluation of Proposed Changes to TS Section 5.1

The TS Section 5.1 identifies the responsibilities for the shift command function associated with modes of plant operation, and is based on personnel positions and qualifications for an operating plant. It identifies the need for a delegation of authority for command in an operating plant when the principal assignee leaves the control room.

In TS 5.1.1, Entergy proposed to change "superintendent" to "manager," "plant" to "facility," and delete the term "his." These administrative change reflects the fact that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1). Changing "superintendent" to "manager," or removing the gender-specific term "his," does not change the intent of TS 5.1.1 or the responsibilities and duties of the

position described. The term “plant” implies operating; the term “facility” more appropriately represents the permanently shutdown and defueled condition. Overall management and Palisades staff responsibilities and the description of the facility are unchanged.

Entergy proposed to change TS 5.1.2 to eliminate the discussion about transfer of control of the control room command function when the Shift Supervisor leaves the control room and eliminate the mode dependency for this function and personnel qualifications associated with an operating plant. The proposed change establishes the proposed retitled shift manager as having command of the shift. Delegation of command is unnecessary once Palisades is in the permanently defueled condition with fuel in the spent fuel pool (SFP). Any event involving loss of SFP cooling would evolve slowly. While the shift would continue to be staffed with qualified personnel consistent with the proposed TS 5.2.2 (see Section 4.3 of this safety evaluation (SE)), continuous staffing of the control room by the proposed retitled shift manager would not be necessary to protect the environment and the health and safety of the public.

#### NRC Staff Conclusion of Proposed Changes to TS Section 5.1

The changes from “superintendent” to “manager,” “plant” to “facility,” and delete the term “his” are administrative changes. The shift manager shall be responsible for the shift command function at Palisades. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. Therefore, there will be no operational modes at Palisades after Entergy submits to the NRC both certifications required by 10 CFR 50.82(a)(1). The NRC staff finds that the delegation of control room command is unnecessary once Palisades is in the permanently defueled condition with fuel in the SFP since any event involving loss of SFP cooling would evolve slowly. The NRC staff finds that the CFH will have command function regardless of his/her location in the facility and still protect the environment and the health and safety of the public. The NRC staff reviewed the proposed changes and finds the proposed changes to TS 5.1 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal and, therefore, are acceptable.

#### 4.3 Proposed Changes to TS Section 5.2, “Organization”

##### Current TS Section 5.2

The current TS 5.2.1, “Onsite and Offsite Organizations,” and TS 5.2.2, “Plant Staff,” state:

##### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for plant operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting safety of the Palisades plant.

- a. Lines of authority, responsibility and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented, and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and

relationships, and job descriptions for key positions, or in equivalent forms of documentation. These requirements and the plant specific equivalent of those titles referred to in these Technical Specifications shall be documented in the FSAR.

- b. The plant superintendent shall be responsible for overall safe operation of the plant and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. A specified corporate executive shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the plant to ensure nuclear safety.
- d. The individuals who train the operating staff and those who carry out radiation safety and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

#### 5.2.2 Plant Staff

- a. A non-licensed operator shall be assigned when fuel is in the reactor and an additional non-licensed operator shall be assigned when the reactor is operating in MODES 1, 2, 3, or 4.
- b. (Deleted)
- c. Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i), and 5.2.2.a and 5.2.2.g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the requirements.
- d. A radiation safety technician shall be on site when fuel is in the reactor. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
- e. Not Used
- f. The operations manager or an assistant operations manager shall hold an SRO license. The individual holding the SRO license shall be responsible for directing the activities of the licensed operators.
- g. When in MODES 1, 2, 3, or 4 an individual shall provide advisory technical support to the unit operations shift crew in the areas of

thermal hydraulics, reactor engineering, and plant analysis with regard to the safe operations of the plant. This individual shall meet the qualifications specified by ANSI/ANS 3.1-1993 as endorsed by RG 1.8, Rev. 3, 2000.

### Proposed Changes to TS 5.2

Entergy proposed the following changes to TS 5.2.1 and TS 5.2.2:

#### 5.2.1 Onsite and Offsite Organizations

Onsite and offsite organizations shall be established for facility staff and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safe storage and handling of spent nuclear fuel.

- a. Lines of authority, responsibility and communication shall be established and defined for the highest management levels through intermediate levels to and including all facility organization positions. These relationships shall be documented, and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key positions, or in equivalent forms of documentation. These requirements and the plant specific equivalent of those titles referred to in these Technical Specifications shall be documented in the FSAR.
- b. The plant manager shall be responsible for overall facility safe operation and shall have control over those onsite activities necessary for safe storage and maintenance of spent nuclear fuel.
- c. A specified corporate officer shall have corporate responsibility for the safe storage and handling of spent nuclear fuel and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the facility to ensure safe management of spent nuclear fuel.
- d. The individuals who train the CERTIFIED FUEL HANDLERS and those who carry out radiation protection and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their ability to perform their assigned functions.

#### 5.2.2 Facility Staff

The facility staff organization shall include the following:

- a. Each duty shift shall be composed of at least one shift manager and one NON-CERTIFIED OPERATOR. The NON-CERTIFIED OPERATOR position may be filled by a CERTIFIED FUEL HANDLER.



- b. Oversight of fuel handling operations shall be provided by a CERTIFIED FUEL HANDLER.
- c. Shift crew composition may be less than the minimum requirement of 5.2.2a for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements and all of the following conditions are met:
  - 1) No fuel movements are in progress, and
  - 2) No movement of loads over fuel are in progress, and
  - 3) No unmanned shift positions during shift turnover shall be permitted due to an incoming shift crew member being late or absent.
- d. A radiation protection technician shall be on site during the movement of fuel and during the movement of loads over fuel. The position may be vacant for not more than 2 hours, in order to provide for unexpected absence, provided immediate action is taken to fill the required position.
- e. At least one person qualified to stand watch in the control room (NON-CERTIFIED OPERATOR or CERTIFIED FUEL HANDLER) shall be present in the control room when nuclear fuel is stored in the spent fuel pool.
- f. The shift manager shall be a CERTIFIED FUEL HANDLER.
- g. (Deleted)

#### NRC Staff Technical Evaluation of the Proposed Changes to TS 5.2

In TS 5.2.1, Entergy proposed to change the “safety of the Palisades plant” to the “safe storage and handling of spent nuclear fuel.” Once Entergy submits to the NRC the certifications required in 10 CFR 50.82(a)(1), Palisades’ 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. Entergy will still be responsible for the safety of the spent fuel in the SFP and/or the dry casks, as well as any handling of the spent fuel.

In TS 5.2.1, Entergy proposed to change “plant operation” to “facility staff”; this is an administrative change. This administrative change reflects that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1). The term “plant” implies operating; the term “facility” more appropriately represents a permanently shut down and defueled condition.

The TS 5.2.1a. change from “operating” to “facility” is administrative. Similar to above, the term “operating” implies operating; the term “facility” more appropriately represents a permanently shut down and defueled condition.

The TS 5.2.1b identifies the organizational position responsible for the safe operation of the facility, and for control of activities necessary for the safe storage and maintenance of the spent fuel. To reflect the permanently defueled condition, the responsibility for control of activities necessary for the safe operation and maintenance of the plant is changed to the responsibility for safe storage and maintenance of the spent nuclear fuel. The change from “plant” to “facility” is administrative, as discussed above. The change from “superintendent” to “manager” is also administrative and consistent with the proposed change to TS 5.1.1.

The TS 5.2.1c identifies the organizational position responsible for overall facility safety. Entergy proposed to change the title from “corporate executive” to “corporate officer,” and the responsibility from “for overall plant nuclear safety” to “the safe storage and handling of spent nuclear fuel,” and the responsibility for providing technical support to “the plant to ensure nuclear safety” is changed to “the facility to ensure safe management of spent nuclear fuel.” This reflects the fact that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1).

The TS 5.2.1d addresses the requirement for organizational independence of the personnel who train the operations staff, radiation safety personnel, and quality assurance personnel from operating pressures. Entergy proposed to replace “operating staff” with “CERTIFIED FUEL HANDLERS,” “radiation safety” with “radiation protection,” and “their independence from operating pressures” with “their ability to perform their assigned functions.” This reflects the fact that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1).

In TS 5.2.2, Entergy proposed to change “Plant Staff” to “Facility Staff.” This is an administrative change reflects the fact that Palisades will be permanently shutdown and defueled after submitting the certifications required by 10 CFR 50.82(a)(1). The term “plant” implies operating; the term “facility” more appropriately represents the permanently shut down and defueled condition.

In TS 5.2.2, Entergy proposed to add, “The facility staff organization shall include the following:” This is an administrative change and does not affect the intent of the TS requirements.

The current version of TS 5.2.2a stipulates when non-licensed operators must be onsite or assigned to the operating shift, based on the status of fuel in the reactor or operational mode. Since Palisades will no longer be authorized to operate the reactor or emplace or retain fuel in the reactor vessel once the certifications under 10 CFR 50.82(a)(1) are submitted to the NRC, there will no longer be operational modes at Palisades. Entergy proposed to change the minimum requirement to a minimum crew complement of one shift manager and one Non-Certified Operator. This reflects the reduced number of systems compared to an operating reactor required to provide and support SFP cooling and monitor parameters, such as level and temperature, while still maintaining the ability to ensure spent fuel handling operations are carried out in a safe manner. The spectrum of credible accidents and operational events, and the quantity and complexity of activities required for safety will be greatly reduced from that at an operating plant. The shift manager will be qualified as a CFH in accordance with the proposed TS 5.2.2f. In this position, this individual will retain command and control

responsibility for operational decisions and will be responsible for the functions required for event reporting and emergency response.

In the proposed TS 5.2.2b, Palisades will have oversight of fuel handling operations performed by a CFH. This new requirement ensures that movement of spent nuclear fuel is only performed under the oversight of an individual who has been trained and qualified on the procedures, processes, requirements, and standards for safe movement of spent nuclear fuel. Oversight of fuel handling operations refers to the authorization from the shift manager/CFH to move fuel, because the proposed TS 5.2.2f requires the proposed retitled shift manager to be a CFH.

The TS 5.2.2c addresses the conditions under which the minimum shift complement may be reduced. It allows for shift crew composition to be less than the minimum requirement of 10 CFR 50.54(m)(2)(i), TS 5.2.2a, and TS 5.2.2g for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members, provided immediate action is taken to restore the shift crew composition to within the minimum requirements. The three limitations during such periods are added to ensure that no fuel movement or movement of loads over the spent fuel occur during an absence. Entergy proposed to remove the reference to 10 CFR 50.54(m)(2)(i), because Palisades will not return to operation once the certifications under 10 CFR 50.82(a)(1) are submitted to the NRC, and the requirement for licensed operating personnel will no longer be applicable. Entergy proposed to remove the reference to TS 5.2.2g to be consistent with the proposed change to delete TS 5.2.2g.

The TS 5.2.2d establishes the requirement for a person qualified in radiation protection procedures to be onsite when fuel is in the reactor. This TS section also allows for the position to be vacant for not more than 2 hours. In order to provide for unexpected absence, immediate action is taken to fill the required position. Entergy proposed to revise the condition of TS 5.2.2d, so that an individual qualified in radiation protection procedures is present onsite during the movement of fuel and during the movement of loads over fuel, because fuel will not be able to be emplaced or retained in the reactor vessel once the certifications under 10 CFR 50.82(a)(1) are submitted to the NRC. Changing "radiation safety technician" to "radiation protection technician," is administrative and does not change the intent of TS 5.2.2d or the responsibilities and duties of the position described.

In the proposed TS 5.2.2e, Entergy proposed to add the requirement for having one qualified watch stander (either a Non-Certified Operator or CFH) in the control room when fuel is stored in the SFP. This reflects the reduced requirement for control room personnel training and qualification for a facility that is no longer authorized to operate the reactor or emplacement or retention of fuel in the reactor vessel once the certifications of 10 CFR 50.82(a)(1) have been submitted to the NRC. The training and qualification for the Non-Certified Operator will be determined in accordance with the SAT as defined in 10 CFR 55.4. This process ensures that the Non-Certified Operator will be qualified to perform the functions necessary to monitor and ensure safe storage of fuel. The SAT process requires: (1) systematic analysis of the jobs to be performed; (2) learning objectives to be derived from the analysis which describe desired performance after training; (3) training design and implementation to be based on the learning objectives; (4) evaluation of trainee mastery of the objectives during training; and (5) evaluation and revision of the training based on the performance of trained personnel in the job setting. The licensee stated the control room will remain the physical center of the command function; however, since control of activities may be performed either remotely from the control room or locally in the facility, the location of the command center is functionally where the control room supervisor is located in accordance with the proposed TS 5.1.2. Communication capabilities

are available outside the control room between the operators and facility personnel to safely manage the storage and handling of spent nuclear fuel. Adding this requirement ensures that the primary functions of the control room at a permanently shutdown reactor, such as monitoring plant systems, response to abnormal conditions, communications with onsite personnel and offsite agencies, emergency response, and coordination of facility activities will be maintained at all times when fuel is stored in the SFP.

The TS 5.2.2f establishes the requirement for the operations manager, or an assistant operations manager, to hold a SRO license. Entergy proposed to revise TS 5.2.2f to replace the requirement with a requirement that the proposed retitled shift manager be a CFH. Once the certifications under 10 CFR 50.82(a)(1) have been submitted to the NRC, the requirements of 10 CFR 50.54(m) will no longer be applicable, because the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. These certifications also obviate the need for the operators' licenses specified in 10 CFR Part 55. Therefore, there is no longer a need for operations management staff to hold an SRO license. Replacing this with a requirement that the proposed retitled shift manager be a CFH ensures that the senior individual on shift is appropriately trained and qualified in accordance with the NRC-approved fuel handler training program, to supervise shift activities. The Palisades management structure will not require positions above the proposed retitled shift manager to be a CFH or attend equivalent training. Entergy stated that once Palisades is permanently shutdown and defueled, the time available to mitigate credible events is expected to be greater than that for current design basis events. As such, Entergy states that Palisades' management oversight of the facility can be performed by individuals meeting the applicable requirements of American National Standards Institute (ANSI)/American Nuclear Society (ANS) 3.1-1978 (as required by TS 5.3.1) and need not be qualified as CFHs.

The TS 5.2.2g establishes the requirements for a shift technical advisor position. Entergy proposed to delete TS 5.2.2g, because this position is only required for a plant authorized for power operations. Once the certifications required by 10 CFR 50.82(a)(1) have been submitted to the NRC, the requirements of TS 5.2.2g will no longer be applicable because the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel.

#### NRC Staff Conclusion of the Proposed Changes to TS 5.2

Once the certifications under 10 CFR 50.82(a)(1) have been submitted to the NRC, the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. The proposed changes to the Palisades organization reflect the fact that Palisades will be permanently defueled so the focus is changed from operating nuclear safety to the safe storage and handling of nuclear fuel. Once Palisades is permanently shutdown and defueled, the time available to mitigate credible events is expected to be greater than that for current design basis events. The NRC staff reviewed the proposed changes and finds that the proposed changes to TS 5.2 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal, and, therefore, are acceptable.

#### 4.4 Proposed Changes to TS Section 5.3, "Plant Staff Qualifications"

##### Current TS 5.3

The current TS 5.3, "Plant Staff Qualifications" states:

##### 5.3 Plant Staff Qualifications

- 5.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI/ANS 3.1-1978 for comparable positions with exceptions specified in the Entergy Quality Assurance Program Manual (QAPM).
- 5.3.2 (Deleted)
- 5.3.3 (Deleted)
- 5.3.4 (Deleted)
- 5.3.5 For the purpose of 10 CFR 55.4, a licensed Senior Reactor Operator (SRO) and a licensed Reactor Operator (RO) are those individuals who, in addition to meeting the requirements of TS 5.3.1, perform the functions described in 10 CFR 50.54(m).

##### Proposed Changes to TS 5.3

Entergy proposed the following changes to TS 5.3:

##### 5.3 Facility Staff Qualifications

- 5.3.1 Each member of the facility staff shall meet or exceed the minimum qualifications of ANSI/ANS 3.1-1978 for comparable positions with exceptions specified in the Quality Assurance Program Manual (QAPM).
- 5.3.2 An NRC approved training and retraining program for CERTIFIED FUEL HANDLERS shall be maintained.
- 5.3.3 (Deleted)
- 5.3.4 (Deleted)
- 5.3.5 (Deleted)

##### NRC Staff Technical Evaluation of the Proposed Changes to TS 5.3

The proposed change to TS 5.3 from "Plant Staff Qualifications" to "Facility Staff Qualifications" is an administrative change. This administrative change reflects that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications under 10 CFR 50.82(a)(1). The term "plant" implies operating; the term "facility" more appropriately represents the permanently shut down and defueled condition.

In TS 5.3.1, Entergy proposed to revise the title of the QAPM by removing specific reference to the Entergy corporate QAPM. This change will allow Palisades to transition from the Entergy corporate QAPM to a site-specific QAPM during the decommissioning process. Entergy does not propose to change the qualification standards or exceptions to the standards. The proposed change is acceptable based on the licensee maintaining the requisite requirements to the minimum qualifications of staff, including any exceptions identified in the current approved corporate QAPM, in the Palisades site-specific QAPM to be used during decommissioning process. Any changes to the QAPM will be required to be submitted to the NRC in accordance with the applicable provisions of 10 CFR 50.54(a). The change from "plant" to "facility" is administrative, as discussed above.

In TS 5.3.2, Entergy proposed to add new language to require that an NRC-approved fuel handler training and retraining program for the CFHs be maintained. The fuel handler training program approved by the NRC ensures that the qualifications of CFHs are commensurate with the tasks to be performed and the conditions requiring response. The regulation under 10 CFR 50.120, "Training and qualification of nuclear power plant personnel," requires training programs to be derived using a SAT as defined in 10 CFR 55.4. Although the requirements of 10 CFR 50.120 apply to holders of an operating license issued under 10 CFR Part 50, and the Palisades license will no longer authorize operation following submittal of the certifications required by 10 CFR 50.82(a)(1), the Palisades CFH Training and Retraining Program nonetheless aligns with those requirements. The CFHs are non-licensed operators and the requirement of 10 CFR 50.120 apply to all non-licensed operators for Part 50 licenses. The Palisades CFH Training and Retraining Program provides adequate confidence that appropriate SAT based training of personnel who will perform the duties of a CFH is conducted to ensure the facility is maintained in a safe and stable condition.

Entergy proposed no changes to TS 5.3.3 and TS 5.3.4.

The TS 5.3.5 defines SROs and ROs as the individuals who perform the functions defined in the regulations under 10 CFR 50.54(m). Deletion of TS 5.3.5 is acceptable because neither 10 CFR 50.54(m) nor the requirement for licensed operators per 10 CFR Part 55 apply following the submittal of the certifications under 10 CFR 50.82(a)(1).

#### NRC Staff Conclusion of the Proposed Changes to TS 5.3

Once the certifications under 10 CFR 50.82(a)(1) have been submitted to the NRC, the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. The proposed changes to the Palisades facility staff qualifications reflect the fact that Palisades will be permanently defueled so the focus is changed from operating nuclear safety to the safe storage and handling of nuclear fuel. Once Palisades is permanently shutdown and defueled, the time available to mitigate credible events is expected to be greater than that for current design basis events. The NRC staff reviewed the proposed changes and finds the proposed changes to TS 5.3 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal, and, therefore, are acceptable.

#### 4.5 Proposed Changes to TS Section 5.4, "Procedures"

##### Current TS 5.4

The current TS 5.4, "Procedures," states:

##### 5.4 Procedures

- 5.4.1 Written procedures shall be established, implemented, and maintained covering the activities references below:
- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
  - b. The emergency operating procedures required to implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
  - c. Not used;
  - d. All programs specified in Specification 5.5.

##### Proposed Changes to TS 5.4

Energy proposed the following changes to TS 5.4:

##### 5.4 Procedures

- 5.4.1 Written procedures shall be established, implemented, and maintained covering the activities references below:
- a. The procedures applicable to the safe storage of spent nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978;
  - b. (Deleted)
  - c. Not used;
  - d. All programs specified in Specification 5.5.

##### NRC Staff Technical Evaluation of the Proposed Changes to TS 5.4

The TS 5.4 provides a description and requirements regarding administration of written procedures and will remain applicable with the reactor permanently defueled. As such, it is retained and revised to reflect a permanently defueled condition. Relevant procedures drawings and instructions will continue to be controlled per 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Power Plants and Fuel Reprocessing Plants," Criterion VI, "Document Control." Activities involving security and emergency planning and preparedness will continue to be controlled by procedure.

In TS 5.4.1a, Entergy proposed to revise the applicability for this TS to procedures applicable to the safe storage of nuclear fuel recommended in Regulatory Guide 1.33, Revision 2, Appendix A. Since operating and refueling the reactor will both be prohibited by the 10 CFR Part 50 license once the certifications under 10 CFR 50.82(a)(1) have been submitted to the NRC, procedures associated with these activities will no longer need to be maintained. Procedures governing fuel handling operations will provide the guidance necessary to ensure safe handling of spent fuel in the SFP and transfer from the SFP to dry fuel storage casks. Procedures governing responses to fuel handling accidents, personnel injuries, SFP events, and external events provide the necessary guidance to mitigate the consequences of such events. No change to Palisades' actions in response to a fuel handling accident is proposed by the licensee.

The TS 5.4.1b requires establishment, implementation, and maintenance of emergency operating procedures that implement the requirements of NUREG-0737 and NUREG-0737, Supplement 1, as stated in Generic Letter (GL) 82-33. The TS 5.4.1b is proposed to be deleted as GL 82-33 was only addressed to licensees of operating reactors, applicants for operating licenses, and holders of construction permits, none of which will apply to Palisades in the permanently defueled condition. Procedures governing the site response to accidents, events and injuries will provide the necessary guidance to mitigate the consequences of such events.

Entergy proposed no changes to TS 5.4.1c and TS 5.4.1d.

#### NRC Staff Conclusion of the Proposed Changes to TS 5.4

Once the certifications under 10 CFR 50.82(a)(1) have been submitted to the NRC, the Palisades 10 CFR Part 50 license will no longer authorize operation of the reactor or emplacement or retention of fuel in the reactor vessel. The proposed changes to the Palisades procedures reflect the fact that Palisades will be permanently defueled so the focus is changed from operating nuclear safety to the safe storage and handling of nuclear fuel. Once Palisades is permanently shutdown and defueled, the time available to mitigate credible events is expected to be greater than that for current design basis events. The NRC staff reviewed the proposed changes and finds the proposed changes to TS 5.4 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal and, therefore, are acceptable.

#### 4.6 Proposed Changes to TS Section 5.5, "Programs and Manuals"

##### Current TS Section 5.5

The current TS 5.5.1c.2. and TS 5.5.15b.2., state:

##### 5.5.1 Offsite Dose Calculations Manual (ODSM)

c. Changes to ODCM:

2. Shall become effective after approval by the plant superintendent.

##### 5.5.15 Process Control Program

b. Changes to the Process Control Program:



2. Shall become effective after approval by the plant superintendent.

#### Proposed Changes to TS 5.5

Entergy proposed the following changes to TS 5.5.1c.2. and TS 5.5.15b.2.:

##### 5.5.1 Offsite Dose Calculations Manual (ODSM)

- c. Changes to ODCM:
  2. Shall become effective after approval by the plant manager.

##### 5.5.15 Process Control Program

- b. Changes to the Process Control Program:
  2. Shall become effective after approval by the plant manager.

#### NRC Staff Technical Evaluation of the Proposed Change to TS 5.5

In TS 5.5.1c.2. and TS 5.5.15b.2., Entergy proposed to change “superintendent” to “manager.” These administrative changes reflect the fact that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1). Once Palisades is permanently shutdown and defueled, the plant manager will be the senior position. Changing “superintendent” to “manager” does not change the intent of TS 5.5.1c.2. or TS 5.5.15b.2., or the responsibilities and duties of the position described. Overall management and Palisades staff responsibilities and the description of the facility are unchanged.

#### NRC Staff Conclusion of Proposed Changes to TS Section 5.5

The changes from “superintendent” to “manager” are administrative changes. The proposed changes to TS 5.5 reflect the fact that Palisades will be permanently defueled so the focus is changed from operating nuclear safety to the safe storage and handling of nuclear fuel. Once Palisades is permanently shutdown and defueled, the plant manager will be the senior position. The NRC staff reviewed the proposed changes and finds the proposed changes to TS 5.5 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal and, therefore, are acceptable.

#### 4.7 Proposed Changes to TS Section 5.7, “High Radiation Area”

##### Current TS Section 5.7

The current TS 5.7.2a.1., states:

- 5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem [roentgen equivalent man]/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads

[radiation absorbed dose]/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
  1. All such door and gate keys shall be maintained under the administrative control of the shift supervisor, radiation protection manager, or his or her designee.

Proposed Changes to TS 5.7

Entergy proposed the following change to TS 5.7.2a.1.:

5.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
  1. All such door and gate keys shall be maintained under the administrative control of the shift manager, radiation protection manager, or his or her designee.

NRC Staff Technical Evaluation of the Proposed Change to TS 5.7

In TS 5.7.2a.1, Entergy proposed to change “shift supervisor” to “shift manager.” This administrative change reflects the fact that Palisades will be permanently shutdown and defueled after submitting to the NRC the certifications required by 10 CFR 50.82(a)(1). Changing “shift supervisor” to “shift manager” does not change the intent of TS 5.5.1c.2. or TS 5.5.15b.2., or the responsibilities and duties of the position described. The shift manager will be trained and qualified in accordance with the NRC-approved fuel handler training program. Overall management and Palisades staff responsibilities and the description of the facility are unchanged.

NRC Staff Conclusion of Proposed Changes to TS Section 5.7

The change from “shift supervisor” to “shift manager” is an administrative change. The proposed change to TS 5.7 reflects the fact that Palisades will be permanently defueled so the focus is changed from operating nuclear safety to the safe storage and handling of nuclear fuel. Once Palisades is permanently shutdown and defueled, the shift manager shall be responsible for the shift command function at Palisades. The NRC staff reviewed the proposed changes and finds the proposed changes to TS 5.7 reflect the scope of the activities that would result from the permanent cessation of operations and permanent fuel removal and, therefore, are acceptable.

## 5.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Michigan State official was notified of the proposed issuance of the amendment on April 23, 2018. The Michigan State official had a comment regarding ensuring that the license amendment accounts for the revised date for permanent cessation of operations at Palisades. This comment has been addressed.

## 6.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding published in the *Federal Register* on September 12, 2017 (82 FR 42847). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

## 7.0 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 amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date of issuance: June 4, 2018

SUBJECT: PALISADES NUCLEAR PLANT - ISSUANCE OF AMENDMENT REGARDING ADMINISTRATIVE CONTROLS FOR PERMANENTLY DEFUELED CONDITION (CAC NO. MG0021; EPID L-2017-LLA-0266) DATED JUNE 4, 2018

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