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October 29, 2009

U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

SUBJECT: Final Safety Analysis Report Update – Revision 28

Palisades Nuclear Plant  
Docket 50-255  
License No. DPR-20

Dear Sir or Madam:

In accordance with 10 CFR 50.4(b)(6), Entergy Nuclear Operations, Inc. (ENO) is providing the Palisades Nuclear Plant (PNP) Final Safety Analysis Report (FSAR) update, Revision 28. This FSAR update is provided in its entirety on the CD-ROM in Enclosure 1. Revision 28 changes, with the exception of typographical corrections and format changes, are denoted by vertical lines in the outboard margins for all revisions to text. All changes, other than typographical corrections and format changes, were made under the provisions of 10 CFR 50 or in accordance with safety evaluations received from the Nuclear Regulatory Commission (NRC). Attachment 1 to Enclosure 1 contains a list of changes made in the FSAR revision. No changes were made under the provisions of 10 CFR 50.59 that were not previously submitted to the Commission. No information was removed from the FSAR per Regulatory Guide 1.181, "Content of the Updated Final Safety Analysis Report in Accordance with 10 CFR 50.71(e)."

Enclosure 2 provides a CD-ROM containing the PNP Fire Protection Program documents revised since the last FSAR update submittal dated April 17, 2008. These documents are provided in accordance with Renewed Facility Operating License Condition 2.C.(3)b.

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NRC


FSAR, Revision 28, incorporates changes made to the PNP or to the plant procedures described in the FSAR, and all other applicable information and analyses submitted to the NRC or prepared pursuant to NRC requirements up to six months prior to the date of this submittal.

Summary of Commitments

This letter identifies no new commitments and no revisions to existing commitments.

I declare under penalty of perjury that the foregoing is true and correct. Executed on October 29, 2009.

Sincerely,



cjs/jse

Enclosures    1. CD-ROM Containing Final Safety Analysis Report – Revision 28  
                  2. CD-ROM Containing Revised Fire Protection Program Documents

CC                Administrator, Region III, USNRC  
                  Project Manager, Palisades, USNRC  
                  Resident Inspector, Palisades USNRC

**ENCLOSURE 1**

**PALISADES NUCLEAR PLANT**

**CD-ROM CONTAINING FINAL SAFETY ANALYSIS REPORT – REVISION 28**

1 CD-ROM Enclosed

**ATTACHMENT 1**

**PALISADES NUCLEAR PLANT**

**PALISADES FSAR REVISION 28 LIST OF CHANGES**

4 Pages Follow

## Palisades FSAR Revision 28 List of Changes

Log No.	Affected FSAR Sections, Tables, or Figures	Description of Change
08-002	FSAR Sections 6.10.2, 9.8.1.4.a, and 9.8.2.4.12.b.(3)	This change reflects License Amendment Number 230 (dated February 20, 2008), which revised control room habitability requirements.
08-004	FSAR Table 4-16	This change revises FSAR Table 4-16 to align with the chemistry administrative limits of the primary coolant system described in Chemistry Operating Procedure 1, "Primary Coolant System Chemistry."
08-005	FSAR Section 7.2	This updates the FSAR to reflect Engineering Change 5861, which modified the turbine generator control system to improve system reliability.
08-007	FSAR Figure 12-3	This change removes FSAR Figure 12-3 (Palisades Nuclear Plant Organization), which is outdated. The current plant organization is now depicted in Figures 12-1 and 12-2.
08-008	FSAR Section 9.8.2	FSAR Section 9.8.2 is revised to clarify that the described 135°F engineered safeguards room design temperature is for post-accident conditions.
08-009	FSAR Table 4-6	This revises Table 4-6 to reflect the material (ASTM A-351 Gr CF3) that was approved for the primary coolant pump P-50D hydrostatic bearing under Engineering Change 5000121326.
08-011	FSAR Section 9.11.5.1.2	This updates the FSAR to reflect the use of the Transnuclear 24PTH-S125 dry fuel storage cask, which was approved under Engineering Change EC5000122423.
08-012	FSAR Section 1.1.2 and Table 1-1	This FSAR change adds a discussion of Palisades' twenty year license extension to Section 1.1.2 and Table 1-1. This extension was approved by the NRC via issuance of a renewed facility operating license on January 17, 2007.
08-013	FSAR Section 6.1	This change adds to the FSAR a brief discussion of the administrative controls implemented to minimize containment sump debris in response to Generic Safety Issue 191, "Assessment of Debris Accumulation on PWR Sump Performance."
08-014	FSAR Appendix 7C	Appendix 7C, "Regulatory Guide 1.97 Rev 3 Parameter Summary Table," is revised to correct errors and inconsistencies identified in Condition Report CR-PLP-2007-06321. This table compares Palisades' instrumentation with requirements in the Regulatory Guide.
08-016	FSAR Section 8.6.2.	This adds a description of the temporary modification to disable the 2400 VAC fast transfer from the safeguards transformer 1-1 or the station power transformer 1-2 to the startup transformer 1-2, which was implemented under Engineering Change 10638.
08-017	FSAR Section 4.8	FSAR Section 4.8 is revised to reflect that the primary coolant gas vent system piping contains both Type 304 and Type 316 stainless steel piping (ref: Condition Report CR-PLP-2008-03351).
08-018	FSAR Section 4.3.7	This revises FSAR Section 4.3.7 to clarify the description of the primary coolant system nozzle welds to which the Mechanical Stress Improvement Process was applied. This process mitigates pressurized water stress corrosion cracking.

## Palisades FSAR Revision 28 List of Changes

08-019	FSAR Section 12.1.1	This corrects the referenced figure in Section 12.1.1, which should be "Figure 12-2" rather than "Figure 2-2".
08-020	FSAR Appendix 7C	This FSAR change corrects the classification of the containment hydrogen monitors, which should be Category 3 rather than Category 1.
08-022	FSAR Tables 8-6 and 8-7	This updates diesel generator sequence start information in the FSAR tables to reflect revision of diesel generator loading calculation EA-ELEC-LDTAB-05, "Emergency Diesel Generators 1-1 and 1-2 Steady State Loadings." The nameplate horsepower for miscellaneous loads and references to the calculation are updated in the tables.
08-023	FSAR Table 8-3	FSAR Table 8-3 is revised to list the correct 2400V system breaker MVA ratings. The breakers were previously installed under Functionally Equivalent Substitution 99-012.
08-024	FSAR Section 5.5.1.1.6	This adds a discussion of a tornado missile barrier installed to protect the condensate storage tank under Engineering Change 7237.
08-025	FSAR Sections 9.11 and 14.19.1 and Section 9 and 14.19 references	The FSAR is revised to include a discussion of the spent fuel pool dilution analysis of record (EA-WJB-00-01, "Spent Fuel Pool Dilution Analysis") that was used in support of Technical Specification Amendment 207 (ref: Condition Report CR-PLP-2008-03263).
08-027	Revise FSAR Table 11-15	FSAR Table 11-15, "Process Radiation Service and Equipment," is updated to reflect replacement of an analog radiation monitor with a digital radiation monitor under Engineering Change 5000122451.
08-028	Revise FSAR Sections 4.7.1 and 6.1.2.2	This FSAR change reflects the permanent disabling of a containment sump level indicating alarm under Engineering Change 6553.
09-002	FSAR Section 3.3.2.5	This change revises FSAR to reflect that the fuel manufacturer provided recommendations on bounding allowable power escalation rates and that these recommendations have been incorporated into plant operating procedures, with some additional built-in conservatism. The FSAR previously said that the power escalation rates are determined for each individual fuel cycle.
09-003	FSAR Table 5.2-1	FSAR Table 5.2-1 is revised to correct the ASME Section XI code year from 1989 to 2001 Edition with 2003 Addenda.
09-005	FSAR Tables 9-1 and 10-3	The FSAR is revised to reflect replacement of the turbine generator seal oil skid under Engineering Change 8490.
09-008	FSAR Sections 9.4. and 9.11.3	FSAR Sections 9.4.1 and 9.11.3 are revised to reflect the portion of spent fuel pool cooling that extends above the spent fuel pool deck (649' elevation). Engineering analysis EA-PSA-TORNADO-08-02 determined that failure of the piping due to a missile generated by high winds or a tornado would result in only a limited loss of spent fuel pool inventory and would not adversely impact cooling and shielding provided by the spent fuel pool cooling system.

### Palisades FSAR Revision 28 List of Changes

09-009	FSAR Chapters 3, 4, and 14	This revises FSAR safety analysis and fuel assembly information due to the cycle 21 reactor core reload package (Engineering Change 11420). Cycle 21 introduces M5 fuel assembly cladding, which was approved in Amendment No. 234 dated December 12, 2008.
09-010	FSAR Section 1.2.5 and Figure 10-5	The FSAR is revised due to the replacement of the main generator under Engineering Change 8157.
09-0011	FSAR Appendix 7A	This editorially revises FSAR Appendix 7A to reflect that surveillance test procedure RI-3, concerning the calibration of pressurizer pressure channels, was split into five separate procedures (RI-3A, B, C, D, and E).
09-013	FSAR Section 9.11	FSAR 9.11 is being revised due to long term stability issues with carborundum in the Region 1 spent fuel pool storage racks, a revised criticality analysis, and Amendment No. 236 issued by the NRC on February 6, 2009.
09-016	FSAR Section 14.18.3 and Tables 14.18.3-1, 2, and 3	The FSAR is updated to reflect a revision of the site containment compartment pressurization analysis.
09-018	FSAR Table 1.9	This revises FSAR Table 1-9 due to a change in the commitment date to submit the Reactor Vessel Internals Program in NRC letter dated March 24, 2009.
09-019	FSAR 12.2	This updates FSAR Section 12.2, "Plant Staff Training Program," to align with the current site training program.
09-020	FSAR Section 14.15	The FSAR steam generator tube rupture analysis description is revised to include a discussion of the NRC review of the analysis under the Systematic Evaluation Program.
09-021	FSAR Sections 1.8.11 and 9.11.4.3.11	These changes incorporate additional references to Palisades' NUREG-0612 submittals and add a brief discussion of Palisades' reactor vessel head drop analysis. These FSAR sections are revised per NEI 08-05, "Industry Initiative of Control of Heavy Loads."
09-023	FSAR Section 9.11.3.5.1	This change revises FSAR Section 9.11.3.5.1 to state that the new fuel elevator override key shall not be issued when the movement of irradiated fuel is in progress. This FSAR section previously said that the keys are only issued when moving non-irradiated fuel, but there are other times when the keys need to be issued, such as during fuel elevator maintenance, that do not involve the movement of non-irradiated fuel. This FSAR revision reflects these other instances in which the override key needs to be issued.
09-025	FSAR Table 4-4	This revises the number of steam generator tubes plugged in FSAR Table 4-4 to reflect the tubes that were plugged during the 2009 refueling outage.
09-027	FSAR Table 8-5	FSAR Table 8-5 is revised to correct discrepancies concerning DC bus short circuit ratings and to add equipment identification numbers (Engineering Change 15265).
09-029	FSAR Tables 8-6 and 8-7	This FSAR change updates the revision number of calculation EA-ELEC-LDTAB-005, "Emergency Diesel Generators 1-2 & 1-2 Steady State Loadings," in FSAR Tables 8-6 and 8-7.

### Palisades FSAR Revision 28 List of Changes

09-036	FSAR Section 4.5.6	This revises FSAR Section 4.5.6 to clarify that NRC Order EA-03-09 (Issuance of First Revised NRC Order (EA-03-009) Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors) has been superseded by the 2008 revision of 10 CFR 50.55a.
09-038	FSAR Sections 1.3, 3.3.2.7, 4.3.7, and 5.8.8.2.2	This makes miscellaneous minor editorial changes in various FSAR sections.
09-040	FSAR Section 9.8.2 and Chapter 9 References	The FSAR is updated to reflect the replacement of control room heating, ventilation, and air conditioning system dampers with bubble-tight dampers per Engineering Change 8368.
09-047	FSAR Chapters 2, 11, and 14	This revises FSAR safety analyses to reflect adoption of the alternate source term methodology under Engineering Change 8368. Use of this methodology was approved by the NRC in Amendment No. 226 dated September 28, 2007.
09-050	FSAR Sections 1.88, 5.1.2.4, 5.6.7.1, and Section 5.6 References	This FSAR change updates references to SR-6, "Special Report No. 6 - Analysis of Postulated High Energy Line Breaks Outside of Containment." This calculation was revised to more accurately describe the response of the turbine building to a high energy line break.



**ENCLOSURE 2**

**PALISADES NUCLEAR PLANT**

**CD-ROM CONTAINING REVISED FIRE PROTECTION PROGRAM DOCUMENTS**

**Documents on CD-ROM:**

- 1) Fire Protection Implementing Procedure (FPIP)-1, Revision 15
- 2) FPIP-1, Revision 16
- 3) FPIP-4, Attachment 8, Revision 24
- 4) FPIP-4, Attachment 8, Revision 25
- 5) FPIP-4, Attachment 8, Revision 26

**1 CD-ROM Enclosed**