

10 CFR 50.90

January 28, 2002

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

DOCKET 50-255 - LICENSE DPR-20 - PALISADES NUCLEAR PLANT
LICENSE AMENDMENT REQUEST: CORE OPERATING LIMITS REPORT
ANALYTICAL METHODS

Pursuant to 10 CFR 50.90, Nuclear Management Company, LLC (NMC) requests Nuclear Regulatory Commission review and approval of a proposed license amendment for the Palisades Nuclear Plant. The proposed amendment would revise the Core Operating Limits Report (COLR) analytical methods referenced in Technical Specification (TS) 5.6.5.b. These changes are needed to support the next operating fuel cycle.

Enclosure 1 provides a detailed description of the proposed change, background and technical analysis, No Significant Hazards determination, and Environmental Review Consideration. Enclosure 2 provides the proposed revised TS pages. Enclosure 3 provides the annotated TS pages showing the changes proposed.

NMC requests approval of this proposed license amendment by September 6, 2002. NMC further requests a 60-day implementation period following amendment approval.

A copy of this request has been provided to the designated representative of the State of Michigan.

SUMMARY OF COMMITMENTS

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

Laurie Lahti

Laurie A. Lahti
Manager, Licensing

CC Regional Administrator, USNRC, Region III
Project Manager, USNRC, NRR
NRC Resident Inspector - Palisades

A001

NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255

LICENSE AMENDMENT REQUEST
CORE OPERATING LIMITS REPORT ANALYTICAL METHODS

To the best of my knowledge, the content of this license amendment request, which proposes to modify the Core Operating Limits Report analytical methods, is truthful and complete.

By Laurie Lahti
Laurie A. Lahti
Manager, Licensing

Sworn and subscribed to before me this 28th day of January, 2002

Janice M. Milan
Janice M. Milan, Notary Public
Allegan County, Michigan
(Acting in Van Buren County, Michigan)
My commission expires September 6, 2003

(seal)

ENCLOSURE 1

**NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255**

**LICENSE AMENDMENT REQUEST PURSUANT TO 10 CFR 50.90:
CORE OPERATING LIMITS REPORT ANALYTICAL METHODS**

6 Pages

PALISADES NUCLEAR PLANT
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1.0 INTRODUCTION

Nuclear Management Company, LLC (NMC) requests to amend Operating License DPR-20 for the Palisades Nuclear Plant. The proposed change would revise Appendix A, Technical Specifications (TS), by removing one obsolete safety analysis methodology and adding two new safety analysis methodologies to TS 5.6.5.b, "Core Operating Limits Report (COLR)." The two new safety analysis methodologies are available for use by Framatome Advanced Nuclear Power (ANP) in the Palisades' next operating fuel cycle safety analysis. The remaining changes are editorial in nature.

2.0 DESCRIPTION OF THE PROPOSED AMENDMENT

NMC proposes to revise the list of Nuclear Regulatory Commission (NRC) approved safety analysis methodologies for the COLR as follows:

Delete existing line item #6, which describes the EXEM pressurized water reactor (PWR) large break loss-of-coolant accident (LBLOCA) evaluation model, in its entirety.

Insert a new item #6 which describes Framatome ANP non-LOCA methodology for PWRs.

Move existing items #7 through #13 from page 5.0-27 to page 5.0-26.

Add new item #18 which describes Framatome ANP S-RELAP5 based PWR small break loss-of-coolant accident (SBLOCA) evaluation model.

3.0 BACKGROUND

On March 15, 2001, Framatome ANP received NRC approval for EMF-2328(P)(A), "PWR Small Break LOCA [loss-of-coolant accident] Evaluation Model, S-RELAP5 Based." Framatome ANP intends to use this methodology for Palisades' SBLOCA analysis for the next operating fuel cycle.

On May 11, 2001, Framatome ANP received NRC approval for EMF-2310(P)(A), "SRP [Standard Review Plan] Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors." Framatome ANP intends to use this methodology for Palisades' Non-LOCA analyses for the next operating fuel cycle.

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Framatome ANP no longer uses its EXEM PWR LBLOCA Evaluation Model for Palisades' safety analysis. Therefore, NMC proposes to remove this methodology from TS 5.6.5.b.

4.0 TECHNICAL ANALYSIS

The EXEM PWR LBLOCA Model is no longer used by Framatome ANP to perform Palisades' safety analysis. Framatome ANP (formally Siemens Power Corporation) currently uses the SEM/PWR-98 Evaluation Model, which is line item #15 in TS 5.6.5.b, for Palisades' large break LOCA analysis. Amendment 188 to Facility Operating License No. DPR-20 added the SEM/PWR-98 Evaluation Model on November 15, 1999.

The Non-LOCA Methodology is a new methodology developed by Framatome ANP for use on Westinghouse and Combustion Engineering (CE) PWRs. It was approved by the NRC in safety evaluation report (SER) dated May 11, 2001. The use of the revised methodology constitutes an improvement over the previous methodology and would be in accordance with the NRC's SER. Therefore, this proposed change will have no adverse impact on plant safety.

The S-RELAP5 SBLOCA Methodology is a new methodology developed by Framatome ANP for use on Westinghouse and Combustion Engineering PWRs. It was approved by the NRC in SER dated March 15, 2001. The use of the revised methodology constitutes an improvement over the previous methodology and would be in accordance with the NRC's SER. Therefore, this proposed change will have no adverse impact on plant safety.

The proposed change to move existing items #7 through #13 from page 5.0-27 to page 5.0-26 is administrative in nature. Therefore, this proposed change will have no adverse effect on plant safety.

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5.0 NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

Nuclear Management Company, LLC (NMC) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment using the three standards set forth in 10 CFR 50.92, "Issuance of Amendment." The following evaluation supports the finding that operation of the facility in accordance with the proposed change would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed license amendment removes a safety analysis methodology and adds two new safety analysis methodologies in Technical Specification 5.6.5.b. Accidents previously evaluated will be unaffected because they will continue to be analyzed using applicable methodologies approved by the Nuclear Regulatory Commission to ensure all required safety limits are met. The proposed amendment does not affect the acceptance criteria for loss-of-coolant accidents (LOCA) or non loss-of-coolant accidents. As such, the proposed amendment does not increase the probability or consequences of an accident. The proposed amendment does not involve operation of the required structures, systems or components (SSCs) in a manner or configuration different from those previously recognized or evaluated.

Therefore, operation of the facility in accordance with the proposed amendment would not involve a significant increase in the probability or consequences of an accident previously evaluated.

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2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment does not involve a physical alteration of any SSC or a change in the way any SSC is operated. The proposed amendment does not involve operation of any required SSCs in a manner or configuration different from those previously recognized or evaluated. No new failure mechanisms will be introduced by the changes being requested.

Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed amendment does not, by itself, introduce a failure mechanism. The proposed amendment does not involve any physical changes to the plant or manner in which the plant is operated. The proposed changes do not affect the acceptance criteria for loss-of-coolant or non loss-of-coolant accidents. All required safety limits will continue to be analyzed using methodologies approved by the Nuclear Regulatory Commission.

Therefore, the proposed amendment would not involve a significant reduction in a margin of safety.

Based on the evaluation above, NMC has determined that the proposed changes do not involve significant hazards consideration.

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6.0 ENVIRONMENTAL REVIEW CONSIDERATION

NMC has determined that the proposed amendment would not change requirements with respect to installation or use of a facility component located within the restricted area, as defined in 10 CFR 20. The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

7.0 PRECEDENT

On December 19, 2001, the Nuclear Regulatory Commission approved a similar request for Millstone Nuclear Power Station, Unit 2, Docket 50-336, License DPR-65, via Amendment 260. The scope included adding Framatome ANP S-RELAP5 based PWR SBLOCA evaluation model and Framatome ANP non-LOCA methodology for PWRs.

8.0 CONCLUSION

Based on the considerations described above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public. The Palisades Plant Review Committee has reviewed this amendment request and has determined that the change involves no significant hazards consideration. The Palisades Offsite Safety Review Committee has concurred in this determination.

ENCLOSURE 2

**NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
DOCKET 50-255**

**LICENSE AMENDMENT REQUEST PURSUANT TO 10 CFR 50.90:
CORE OPERATING LIMITS REPORT ANALYTICAL METHODS**

**REVISED TECHNICAL SPECIFICATION PAGES
AND
TECHNICAL SPECIFICATION PAGE CHANGE INSTRUCTIONS**

4 Pages

ATTACHMENT TO LICENSE AMENDMENT NO.

FACILITY OPERATING LICENSE NO. DPR-20

DOCKET NO. 50-255

Replace the following pages of 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

5.0-26

5.0-27

INSERT

5.0-26

5.0-27

5.6 Reporting Requirements

5.6.5 COLR (continued)

6. EMF-2310 (P)(A), Revision 0, Framatome ANP, Inc., May 2001, "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors." (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)
7. XN-NF-78-44(NP)(A), "A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, & 3.2.2)
8. ANF-89-151(P)(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," Advanced Nuclear Fuels Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)
9. EMF-92-153(P)(A) and Supplement 1, "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," Siemens Power Corporation. (LCOs 3.2.1, 3.2.2, & 3.2.4)
10. XN-NF-621(P)(A), "Exxon Nuclear DNB Correlation for PWR Fuel Designs," Exxon Nuclear Company. (LCOs 3.2.1, 3.2.2, & 3.2.4)
11. XN-NF-82-06(P)(A) and Supplements 2, 4, and 5, "Qualification of Exxon Nuclear Fuel for Extended Burnup," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)
12. ANF-88-133(P)(A) and Supplement 1, "Qualification of Advanced Nuclear Fuels' PWR Design Methodology for Rod Burnups of 62 GWD/MTU," Advanced Nuclear Fuels Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)
13. XN-NF-85-92(P)(A), "Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

5.6 Reporting Requirements

5.6.5 COLR (continued)

14. EMF-92-116(P)(A), "Generic Mechanical Design Criteria for PWR Fuel Designs," Siemens Power Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)
 15. EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," Siemens Power Corporation. (LCOs 3.1.6, 3.2.1, & 3.2.2)
 16. ANF-87-150 Volume 2, "Palisades Modified Reactor Protection System Report: Analysis of Chapter 15 Events," Advanced Nuclear Fuels Corporation. [Approved for use in the Palisades design during the NRC review of license Amendment 118, November 15, 1988] (LCOs 3.1.6, 3.2.1, & 3.2.2)
 17. EMF-1961(P)(A), Revision 0, Siemens Power Corporation, July 2000, "Statistical Setpoint/Transient Methodology for Combustion Engineering Type Reactors." (LCOs 3.1.6, 3.2.1, 3.2.2, 3.2.4)
 18. EMF-2328 (P)(A), Revision 0, Framatome ANP, Inc., March 2001, "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." (LCOs 3.1.6, 3.2.1, & 3.2.2)
- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems limits, nuclear limits such as shutdown margin, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any mid cycle revisions or supplements, shall be provided, upon issuance for each reload cycle, to the NRC.

ENCLOSURE 3

**NUCLEAR MANAGEMENT COMPANY
PALISADES NUCLEAR PLANT
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**LICENSE AMENDMENT REQUEST PURSUANT TO 10 CFR 50.90:
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**MARK-UP OF TECHNICAL SPECIFICATION
PAGES 5.0-26, AND 5.0-27
(showing proposed changes)**

4 Pages

5.6 Reporting Requirements

5.6.5 COLR (continued)

- ~~6. EXEM PWR Large Break LOCA Evaluation Model as defined by:
(LCOs 3.1.6, 3.2.1, & 3.2.2)~~
- ~~a) XN-NF-82-20(P)(A) Supplement 2, "Exxon Nuclear
Company Evaluation Model EXEM/PWR ECCS Model
Updates," Exxon Nuclear Company.~~
- ~~b) XN-NF-82-20(P)(A) Supplements 1, 3, and 4, "Exxon
Nuclear Company Evaluation Model EXEM/PWR ECCS
Model Updates," Advanced Nuclear Fuels Corporation.~~
- ~~c) XN-NF-82-07(P)(A), "Exxon Nuclear Company ECCS
Cladding Swelling and Rupture Model," Exxon Nuclear
Company.~~
- ~~d) XN-NF-81-58(P)(A) Supplements 1 and 2, "RODEX2 Fuel
Rod Thermal-Mechanical Response Evaluation Model,"
Exxon Nuclear Company.~~
- ~~e) ANF-81-58(P)(A) Supplements 3 and 4, "RODEX2 Fuel
Rod Thermal-Mechanical Response Evaluation Model,"
Advanced Nuclear Fuels Corporation.~~
- ~~f) XN-NF-85-16(P)(A) Volume 1 and Supplements 1, 2, and
3; Volume 2, and Supplement 1, "PWR 17x17 Fuel
Cooling Tests Program," Advanced Nuclear Fuels
Corporation.~~
- ~~g) XN-NF-85-105(P)(A) and Supplement 1, "Scaling of FGTF
Based Reflood Heat Transfer Correlation for Other Bundle
Designs," Advanced Nuclear Fuels Corporation.~~
7. XN-NF-78-44(NP)(A), "A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors," Exxon Nuclear Company. (LCOs 3.1.6, 3.2.1, & 3.2.2)
8. ANF-89-151(P)(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," Advanced Nuclear Fuels Corporation. (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

INSERT A →

INSERT
ITEMS MOVED
FROM PAGE 5.0-27 →

5.6 Reporting Requirements

5.6.5 COLR (continued)

9. EMF-92-153(P)(A) and Supplement 1, "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," Siemens Power Corporation. (LCOs 3.2.1, 3.2.2, & 3.2.4)
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15. EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," Siemens Power Corporation. (LCOs 3.1.6, 3.2.1, & 3.2.2)
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MOVE TO
PAGE
5.0-26

INSERT B

- c. The core operating limits shall be determined such that all applicable limits (e.g., fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling Systems limits, nuclear limits such as shutdown margin, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any mid cycle revisions or supplements, shall be provided, upon issuance for each reload cycle, to the NRC.

Page 5.0-26, Insert A

6. EMF-2310 (P)(A), Revision 0, Framatome ANP, Inc., May 2001, "SRP Chapter 15 Non-LOCA Methodology for Pressurized Water Reactors." (LCOs 3.1.6, 3.2.1, 3.2.2, & 3.2.4)

Page 5.0-27, Insert B

18. EMF-2328 (P)(A), Revision 0, Framatome ANP, Inc., March 2001, "PWR Small Break LOCA Evaluation Model, S-RELAP5 Based." (LCOs 3.1.6, 3.2.1, & 3.2.2)