

May 6, 2003

Mr. Michael Kansler, President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: BEST ESTIMATE LARGE-BREAK LOSS-OF-COOLANT
ACCIDENT EVALUATION METHODOLOGY (TAC NO. MB5520)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 217 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated June 26, 2002, as supplemented on March 12, 2003.

The amendment revises TS 5.6.5.b, "Core Operating Limits Report (COLR)," to incorporate the reference to Westinghouse Topical Report WCAP-12945-P-A, "Code Qualification Document for Best Estimate Loss-of-Coolant Analysis," dated March 1998. The proposed amendment would also allow the use of the analytical methodology to determine the core operating limits.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

/RA/

Patrick D. Milano, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures: 1. Amendment No. 217 to DPR-64
2. Safety Evaluation

cc w/encls: See next page

May 6, 2003

Mr. Michael R. Kansler, President
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - ISSUANCE OF
AMENDMENT RE: BEST ESTIMATE LARGE-BREAK LOSS-OF-COOLANT
ACCIDENT EVALUATION METHODOLOGY (TAC NO. MB5520)

Dear Mr. Kansler:

The Commission has issued the enclosed Amendment No. 217 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated June 26, 2002, as supplemented on March 12, 2003.

The amendment revises TS 5.6.5.b, "Core Operating Limits Report (COLR)," to incorporate the reference to Westinghouse Topical Report WCAP-12945-P-A, "Code Qualification Document for Best Estimate Loss-of-Coolant Analysis," dated March 1998. The proposed amendment would also allow the use of the analytical methodology to determine the core operating limits.

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

/RA/

Patrick D. Milano, Sr. Project Manager, Section 1
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosures: 1. Amendment No. 217 to DPR-64
2. Safety Evaluation

cc w/encls: See next page

Accession Number: ML031260477

OFFICE	PDI-1\PM	PDI-1\LA	SRXB\SC	OGC	PDI-1\SC
NAME	PMilano	SLittle	JUhle	SCole	RLaufer
DATE	04/15/03	04/16/03	04/15/03	04/22/03	05/03/03

Official Record Copy

DATED: May 6, 2003

AMENDMENT NO. 217 TO FACILITY OPERATING LICENSE NO. DPR-64 INDIAN POINT
UNIT 3

PUBLIC

PDI R/F

R. Laufer

S. Little

P. Milano

OGC

G. Hill (2)

W. Beckner

F. Orr

J. Uhle

ACRS

B. Platchek, RI

cc: Plant Service list

Indian Point Nuclear Generating Unit No. 3

cc:

Mr. Jerry Yelverton
Chief Executive Officer
Entergy Operations
1340 Echelon Parkway
Jackson, MS 39213

Mr. John Herron
Senior Vice President and
Chief Operating Officer
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Fred Dacimo
Vice President - Operations
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 1
P. O. Box 308
Buchanan, NY 10511-0308

Mr. Dan Pace
Vice President Engineering
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. James Knubel
Vice President Operations Support
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Joseph DeRoy
General Manager Operations
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 3
P. O. Box 308
Buchanan, NY 10511-0308

Mr. John Kelly
Director - Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Ms. Charlene Faison
Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Harry P. Salmon, Jr.
Director of Oversight
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. James Comiotes
Director, Nuclear Safety Assurance
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 3
P.O. Box 308
Buchanan, NY 10511-0308

Mr. John McCann
Manager, Licensing and Regulatory Affairs
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 2
295 Broadway, Suite 1
P. O. Box 249
Buchanan, NY 10511-0249

Resident Inspector's Office
U.S. Nuclear Regulatory Commission
295 Broadway, Suite 3
P.O. Box 337
Buchanan, NY 10511-0337

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. John M. Fulton
Assistant General Counsel
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Indian Point Nuclear Generating Unit No. 3

cc:

Ms. Stacey Lousteau
Treasury Department
Entergy Services, Inc.
639 Loyola Avenue
Mail Stop: L-ENT-15E
New Orleans, LA 70113

Mr. William M. Flynn, President
New York State Energy, Research, and
Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. J. Spath, Program Director
New York State Energy, Research, and
Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. Paul Eddy
Electric Division
New York State Department
of Public Service
3 Empire State Plaza, 10th Floor
Albany, NY 12223

Mr. Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Mayor, Village of Buchanan
236 Tate Avenue
Buchanan, NY 10511

Mr. Ray Albanese
Executive Chair
Four County Nuclear Safety Committee
Westchester County Fire Training Center
4 Dana Road
Valhalla, NY 10592

Mr. Ronald Schwartz
SRC Consultant
64 Walnut Drive
Spring Lake Heights, NJ 07762

Mr. Ronald J. Toole
SRC Consultant
Toole Insight
605 West Horner Street
Ebensburg, PA 15931

Mr. Charles W. Hehl
SRC Consultant
Charles Hehl, Inc.
1486 Matthew Lane
Pottstown, PA 19465

Mr. Alex Matthiessen
Executive Director
Riverkeeper, Inc.
25 Wing & Wing
Garrison, NY 10524

Mr. Paul Leventhal
The Nuclear Control Institute
1000 Connecticut Avenue NW
Suite 410
Washington, DC, 20036

Mr. Karl Copeland
Pace Environmental Litigation Clinic
78 No. Broadway
White Plains, NY 10603

Jim Riccio
Greenpeace
702 H Street, NW
Suite 300
Washington, DC 20001

ENTERGY NUCLEAR OPERATIONS, INC.

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 217
License No. DPR-64

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by Entergy Nuclear Operations, Inc. (the licensee) dated June 26, 2002, as supplemented on March 12, 2003, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-64 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 217, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

Richard J. Laufer, Chief, Section I
Project Directorate I
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: May 6, 2003

ATTACHMENT TO LICENSE AMENDMENT NO. 217

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Replace the following page of the Appendix A Technical Specifications with the attached revised page. The revised page is identified by amendment number and contains marginal lines indicating the areas of change.

Remove Pages

5.0-35

Insert Pages

5.0-35

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 217 TO FACILITY OPERATING LICENSE NO. DPR-64
ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3
DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated June 26, 2002 (Reference 1), as supplemented on March 12, 2003 (Reference 3), Entergy Nuclear Operations, Inc. (ENO or the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit No. 3 (IP3) Technical Specifications (TS). The requested changes would revise TS 5.6.5.b, "Core Operating Limits Report (COLR)," to incorporate the reference to Westinghouse Topical Report WCAP-12945-P-A, "Code Qualification Document for Best Estimate Loss-of-Coolant Analysis," dated March 1998. The proposed amendment would also allow the use of the analytical methodology to determine the core operating limits. The March 12 letter provided clarifying information that did not expand the scope of the *Federal Register* notice or change the initial proposed no significant hazards consideration determination.

2.0 REGULATORY EVALUATION

The U.S. Nuclear Regulatory Commission (NRC) staff finds that the licensee in its June 26, 2002, application, as supplemented on March 12, 2003, identified the applicable regulatory requirements. The regulatory requirements and guidance which the staff considered in its review of the requested action are as follows:

1. Section 50.46, "Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors," of Title 10 of the *Code of Federal Regulations* (10 CFR 50.46) requires, in part, that emergency core cooling system (ECCS) cooling performance be calculated in accordance with an acceptable evaluation model and be calculated for a number of postulated loss-of-coolant accidents (LOCAs) of different sizes, locations, and other properties.
2. General Design Criterion (GDC) 35, "Emergency core cooling," of Appendix A to 10 CFR Part 50 requires, in part, for the heat transfer capacity and redundancy in components and features for an ECCS.
3. Letter, Timothy E. Collins for Robert C. Jones, NRC, to N. J. Liparulo, Westinghouse Electric Corporation, "Acceptance for Referencing of the Topical Report WCAP-12945 (P), 'WESTINGHOUSE CODE QUALIFICATION DOCUMENT FOR BEST ESTIMATE LOSS OF COOLANT ANALYSIS,' (TAC. NO. M83964)," June 28, 1996.

3.0 TECHNICAL EVALUATION

3.1 Current TS

TS 5.6.5.b states that the analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC. In this regard, the TS refers to various vendor topical reports describing the evaluation methodology and computer codes used to perform the required analyses such as LOCA analysis. Specifically, the current TS 5.6.5.b, in part, identifies: (1) WCAP-9220-P-A, Rev. 1, "Westinghouse ECCS Evaluation Model - 1981 Version," February 1982, (2) WCAP-9561-P-A, Add. 3, Rev. I, "BART A - 1: A Computer Code for the Best Estimate Analysis of Reflood Transients, Special Report: Thimble Modeling W ECCS Evaluation Model," July 1986, and (3) WCAP-10266-P-A, Rev. 2, "The 1981 Version of Westinghouse Evaluation Model Using BASH Code," March 1987.

3.2 Proposed TS Changes

The licensee proposes to incorporate a reference to WCAP-12945-P-A (Reference 2), into TS 5.6.5, Item 3a, replacing the existing reference reports, WCAP-9220-P-A, WCAP-9561-P-A, and WCAP-10266, in Items 3.a, 3.b, and 3.c, respectively.

3.3 Staff Evaluation

Large-Break Loss-of-Coolant Accident (LBLOCA) Evaluation Methodology

WCAP-12945-P-A describes a Westinghouse best estimate LBLOCA evaluation methodology, which includes the computer codes and support information to perform licensing basis LBLOCA analyses for Westinghouse-designed non-upper plenum injection 3-loop and 4-loop pressurized-water reactors (PWRs). Regarding the approval of WCAP-12945-P-A, in Section 4 of the NRC's safety evaluation dated June 28, 1996 (Reference 4), the NRC staff discussed the limitations and usage conditions for this Westinghouse Best Estimate LBLOCA methodology. Some are application conditions as discussed in the following paragraphs. The remainder are generic which Westinghouse has satisfied, or with which Westinghouse is currently in compliance.

IP3 is a 4-loop Westinghouse PWR. Therefore, the WCAP-12945-P-A methodology applies to the class of plants of which IP3 is a member. In addition, to show that the WCAP-12945-P-A methodology applies specifically to IP3, the licensee provided, in its March 12, 2003, letter, a statement that "Entergy Nuclear Operations, Inc. and Westinghouse have ongoing processes which assure that the ranges and values of LOCA analyses inputs for peak clad temperature (PCT) sensitive parameters bound the as-operated plant ranges and values for those parameters." Thus, the NRC staff finds that these processes will provide inputs to the analyses using the methodology which are appropriate for those IP3 LOCA analyses. The staff notes that this statement also applies to IP3 small-break LOCA methodologies and analyses.

On the basis of the prior NRC approval of the WCAP-12945-P-A Best Estimate LBLOCA analysis methodology for the IP3 class of plants, and the licensee's processes to provide inputs to the analyses using the methodology which are appropriate for those IP3 LOCA analyses, the NRC staff concludes that the Westinghouse Best Estimate LBLOCA analysis methodology

described in WCAP-12945-P-A is acceptable for application in performing IP3 licensing basis LBLOCA analyses. Therefore, it is suitable for reference in the IP3 TSs and COLR.

LBLOCA Analyses Results

In its June 26, 2002, letter, the licensee included the LBLOCA analysis results using the Westinghouse Best Estimate methodology that will become the new LBLOCA analysis of record for IP3. The results are:

<u>Criterion (10 CFR 50.46(b))</u>	<u>Result</u>	<u>Acceptance Criteria</u>
(1) PCT	2158 °F	2200 °F
(2) Maximum Cladding Oxidation (Local)	5.6%	17%
(3) Maximum Hydrogen Generation (Core-Wide)	0.65%	1.0%

These results are acceptable because the licensee calculated them with an evaluation methodology (Reference 2) that is specifically applicable to IP3 and because the results comply with the criteria prescribed in 10 CFR 50.46(b). Satisfaction of Criterion 4, "Core Remains Amenable to Cooling," of 10 CFR 50.46 follows mostly from the results for Criteria 1-3 (above), and the results justify that Criterion 4 is also satisfied. Criterion 5, "Long Term Cooling," is a function of the ECCS design and related analyses, which presently continue to be acceptable, and is unaffected by these analyses for IP3.

Summary

The NRC staff concludes that WCAP-12945-P-A is acceptable for application in performing IP3 licensing basis LBLOCA analyses, and it is suitable for reference in IP3 TSs and COLR. Therefore, the proposed changes to TS 5.6.5 are acceptable. In addition, the staff finds the results of the LBLOCA analysis using the Westinghouse Best Estimate methodology for IP3 acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 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

(67 FR 50952). 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.

6.0 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) 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.

7.0 REFERENCES

1. Letter dated June 26, 2002, M. Kansler, ENO, to NRC,, IPN-02-052, "Request for Plant Specific Approval of Best Estimate Large Break LOCA Analysis and Proposed Changes to Technical Specifications to Utilize for Indian Point 3."
2. WCAP-12945-P-A, Revision 2, "Code Qualification Document for Best Estimate LOCA Analysis," March 1998.
3. Letter dated March 12, 2003, M. Kansler, ENO, to NRC, IPN-03-044, "Request for Plant Specific Approval Of Best Estimate Large Break LOCA Analysis and Proposed Changes to Technical Specifications to Utilize For Indian Point 3 - Clarification From February 4, 2002, Telephone Call Between NRC And Entergy Nuclear Operations, Inc."
4. Letter dated June 28, 1996, T. Collins for R. Jones, NRC, to N. J. Liparulo, Westinghouse Electric Corporation, "Acceptance for Referencing of the Topical Report WCAP-12945 (P), 'Westinghouse Code Qualification Document for Best Estimate Loss of Coolant Analysis' (TAC. NO. M83964)."

Principal Contributor: F. Orr

Date: May 6, 2003