

April 2, 2003

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - EXEMPTION FROM
THE REQUIREMENTS OF 10 CFR PART 50, SECTION 50.44(f)
(TAC NO. MB6484)

Dear Mr. Kansler:

The Commission has approved the enclosed exemption from specific requirements of Title 10 of the *Code of Federal Regulations*, Part 50, Section 50.44(f), for the Indian Point Nuclear Generating Unit No. 3. This action is in response to your letter of October 3, 2002, as supplemented by letters dated January 16 and March 11, 2003, that submitted a proposed exemption that would eliminate the licensing basis requirements for the post accident containment ventilation system.

A copy of the exemption has been forwarded to the Office of the Federal Register for publication.

Sincerely,

/RA/

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

Docket No. 50-286

Enclosure: Exemption

cc w/encl: See next page

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Indian Point Nuclear Generating Unit No. 3

cc:

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

Mr. Robert J. Barrett
Vice President - Operations
Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit 3
295 Broadway, Suite 3
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

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

Indian Point Nuclear Generating Unit No. 3

cc:

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

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ENTERGY NUCLEAR OPERATIONS, INC.
INDIAN POINT NUCLEAR GENERATING UNIT NO. 3
DOCKET NO. 50-286
EXEMPTION

1.0 BACKGROUND

Entergy Nuclear Operations, Inc., (ENO or the licensee) is the holder of Facility Operating License No. DPR-64 which authorizes operation of the Indian Point Nuclear Generating Unit No. 3 (IP3). The license provides, among other things, that the facility is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (NRC, the Commission) now or hereafter in effect.

The facility consists of a pressurized-water reactor located in Westchester County in the State of New York.

2.0 REQUEST/ACTION

Title 10 of the *Code of Federal Regulations* (10 CFR), Part 50.44, "Standards for combustible gas control system in light-water-cooled power reactors," requires that each pressurized light-water nuclear power reactor fueled with oxide pellets within cylindrical zircaloy or ZIRLO cladding must be provided with the capability for controlling the combustible gas concentrations in the containment following a postulated loss-of-coolant accident (LOCA). A combustible gas control system is defined by 10 CFR 50.44(h) as a system that operates after a LOCA to maintain the concentrations of combustible gases within the containment, such as hydrogen, below flammability limits. Combustible gas control systems are of two types:

- (1) systems that allow controlled release from containment such as a purge or vent system, and
- (2) systems that do not result in a significant release from containment such as hydrogen recombiners. The combustible gas control system at IP3 consists of a hydrogen recombiner system and a backup purge system.

When IP3 was initially licensed, the post accident containment ventilation (PACV) system was installed to meet the requirements of 10 CFR 50.44(f). Section 50.44(f) requires:

For facilities with respect to which the notice of hearing on the application for a construction permit was published between December 22, 1968, and November 5, 1970, if the incremental radiation dose from purging (and repressurization if a repressurization system is provided) occurring at all points beyond the exclusion area boundary after a postulated LOCA calculated in accordance with §100.11(a)(2) of this chapter is less than 2.5 rem to the whole body and less than 30 rem to the thyroid, and if the combined radiation dose at the low population zone outer boundary from purging and the postulated LOCA calculated in accordance with §100.11(a)(2) of this chapter is less than 25 rem to the whole body and less than 300 rem to the thyroid, only a purging system is necessary, provided that the purging system and any filtration system associated with it are designed to conform with the general requirements of Criteria 41, 42, and 43 of appendix A to this part. Otherwise the facility shall be provided with another type of combustible gas control system (a repressurization system is acceptable) designed to conform with the general requirements of Criteria 41, 42, and 43 of appendix A to this part. If a purge system is used as part of the repressurization system, the purge system shall be designed to conform with the general requirements of Criteria 41, 42, and 43 of appendix A to this part. The containment shall not be repressurized beyond 50 percent of the containment design pressure.

When the Commission issued what is now paragraph c(3)(ii) of 10 CFR 50.44 in 1981, a safety related hydrogen recombiner system was installed. Paragraph c(3)(ii) requires:

By the end of the first scheduled outage beginning after July 5, 1982 and of sufficient duration to permit required modifications, each light-water nuclear power reactor that relies upon a purge/repressurization system as the primary means for controlling combustible gases following a LOCA shall be provided with either an internal recombiner or the capability to install an external recombiner following the start of an accident. The internal or external recombiners must meet the combustible gas control requirements in paragraph (d) of this section. [...]

As a result, the recombiner system became the primary method of combustible gas control while the PACV system became a backup method.

The purpose of this exemption request for 10 CFR 50.44(f) is to remove requirements for the PACV system from the IP3 licensing basis. The licensee is not requesting an exemption from GDC 41, "Containment Atmosphere Cleanup," or 10 CFR 50.44(c). The licensee is requesting this exemption in accordance with 10 CFR 50.12. Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50 when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present. These circumstances include the special circumstances stated in 10 CFR 50.12(a)(2)(ii), "Application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule." The PACV system also has a role in severe accident management. The Commission stated in Attachment 1 to SECY-02-0080, "Proposed Rulemaking - Risk-Informed 10 CFR 50.44, Combustible Gas Control In Containment," their position concerning the ability to vent the containment as a severe accident strategy.

Specifically, Attachment 1 to SECY-02-0080 states:

The Commission continues to view severe accident management guidelines as an important part of the severe accident closure process. Severe accident management guidelines are part of a voluntary industry initiative to address accidents beyond the design basis and emergency operating instructions. In November 1994, the US nuclear industry committed to implement severe accident management at their plants by December 31, 1998, using the guidance contained in NEI 91-04, Revision 1, "Severe Accident Issue Closure Guidelines." Generic severe accident management guidelines developed by each nuclear steam system supplier owners group includes either purging and venting or venting the containment to address combustible gas control. On the basis of the industry-wide commitment, the Commission is not proposing to require such capabilities, but continues to view purging and/or controlled venting of all containment types to be an important combustible gas control strategy that should be considered in a plant's severe accident management guidelines.

3.0 DISCUSSION

Pursuant to 10 CFR 50.12, the Commission may, upon application by any interested person or upon its own initiative, grant exemptions from the requirements of 10 CFR Part 50

when (1) the exemptions are authorized by law, will not present an undue risk to public health or safety, and are consistent with the common defense and security; and (2) when special circumstances are present. These circumstances include the special circumstances that the PACV system is not needed to meet the underlying purpose of 10 CFR 50.44. As mentioned above, the underlying purpose of 10 CFR 50.44 is to show that following a LOCA, an uncontrolled hydrogen-oxygen recombination would not take place, or that the plant could withstand the consequences of uncontrolled hydrogen-oxygen recombination without loss of safety function.

The staff examined the licensee's rationale to support the exemption request of eliminating the licensing basis requirements for the PACV system and concluded that retaining the licensing basis requirements for the PACV system is not necessary to achieve the underlying purpose of 10 CFR Part 50.44. As mentioned above, the PACV system is the backup combustible gas control system. The primary system is the electric hydrogen recombiner system which meets the requirements of 10 CFR 50.44 c(3)(ii). Each of the recombiner subsystems is capable of maintaining the hydrogen concentration below the required limit following a design-basis LOCA. The PACV system is not necessary to meet the intent of the rule.

In their January 16, 2003, letter, the licensee stated that even with the retirement of the PACV system, they will be able to meet all their severe accident management commitments. Their current Severe Accident Management Guidelines (SAMGs) identify, in addition to the PACV system, three alternate methods of containment depressurization and combustible gas control. These methods are backflow to the steam ejector line, containment pressure relief line, and the containment purge system. The licensee stated that the decommissioning of the PACV system will include a revision to the SAMGs that will include the three alternative methods listed above. The staff concludes that the licensee continues to address the Commission's concerns

regarding the use of purging and/or controlled venting of containment as an important combustible gas control strategy that should be considered in the licensee's severe accident management guidelines.

Based on the above, the staff determined that the requested exemption from the requirements of 10 CFR 50.44(f) meets the requirements of 10 CFR 50.12. The staff finds the requested exemption acceptable. Therefore, the staff concludes that pursuant to 10 CFR 50.12(a)(2) the licensee's requested exemption from the requirements of 10 CFR 50.44(f) for IP3 as specified in a letter dated October 3, 2002, and as supplemented by letters dated January 16 and March 11, 2003, is acceptable.

4.0 CONCLUSION

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12(a), the exemption is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security. Also, special circumstances are present. Therefore, the Commission hereby grants ENO an exemption from the requirement to maintain a purge/repressurization system of 10 CFR 50.44(f) for IP3.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will not have a significant effect on the quality of the human environment (68 FR 15487).

This exemption is effective upon issuance.

Dated at Rockville, Maryland, this 2nd day of April, 2003.

FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

John A. Zwolinski, Director
Division of Licensing Project Management
Office of Nuclear Reactor Regulation