

Mr. James Knubel  
 Chief Nuclear Officer  
 Power Authority of the State  
 of New York  
 123 Main Street  
 White Plains, NY 10601

April 10, 1998

SUBJECT: EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 50.60, "ACCEPTANCE CRITERIA FOR FRACTURE PREVENTION MEASURES FOR LIGHTWATER NUCLEAR POWER REACTORS FOR NORMAL OPERATION." TO ALLOW USE OF CODE CASE N-514 - INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 (TAC NO. M99928)

Dear Mr. Knubel:

By letter dated November 3, 1997, you requested an exemption from the requirements of 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention Measures for Lightwater Nuclear Power Reactors for Normal Operation."

By granting this exemption, NRC permits the use of Code Case N-514 in place of the safety margins required by Appendix G to 10 CFR Part 50 to determine the low temperature overpressure parameters.

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

Sincerely,

Original Signed by:

George F. Wunder, Project Manager  
 Project Directorate I-1  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure: Exemption

cc w/encl: See next page

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NAME	GWunder/rsl		SLittle	SBajwa		JZwolinski
DATE	03/24/98		03/24/98	03/17/98	03/ /98	03/ /98
OFFICE	NRR:ADPR(A)		D:NRR			
NAME	SBoger		SCollins			
DATE	03/18/98		03/18/98			

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April 10, 1998

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the quality of the human environment ( 63 FR 17903 ).

This exemption is effective upon issuance. Dated at Rockville, Maryland, this 10th day of April 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by Samuel J. Collins

Samuel J. Collins, Director Office of Nuclear Reactor Regulation

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NAME	Gwynder/rsl		SLittle	SBajwa		JZwojtki
DATE	03/24/98		03/24/98	03/17/98	03/198	03/8/98
OFFICE	NRR:ADPR(A)		D:NRR			
NAME	BBoger		SCollins			
DATE	03/8/98		03/10/98			

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Mr. James Knubel  
 Chief Nuclear Officer  
 Power Authority of the State  
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 123 Main Street  
 White Plains, NY 10601

April 10, 1998

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Original Signed by:

George F. Wunder, Project Manager  
 Project Directorate I-1  
 Division of Reactor Projects - I/II  
 Office of Nuclear Reactor Regulation

Docket No. 50-286

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OFFICE	PM:PD1	E	LA:PD1-1	D:PD1-1	OGC	D:DRPE(A)
NAME	GWunder/rs1		SLittle	SBajwa		AZwolinski
DATE	03/14/98		03/14/98	03/17/98	03/ /98	03/ /98
OFFICE	NRR:ADPR(A)		D:NRR			
NAME	BBoger		SCollins			
DATE	03/18/98		03/18/98			

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April 10, 1998

- 5 -

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FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by  
Samuel J. Collins

Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation

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OFFICE	PM:PDI-1	E	LA:PDI-1	D:PDI-1	OGC	D:DRPE(A)
NAME	G...der/rsl		SLittle	SBajwa		JZwolinski
DATE	03/24/98		03/24/98	03/17/98	03/19/98	03/18/98
OFFICE	NRR:ADPR(A)		D:NR			
NAME	BBoger		SCollins			
DATE	03/18/98		03/10/98			

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**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

WASHINGTON, D.C. 20555-0001

April 10, 1998

Mr. James Knubel  
Chief Nuclear Officer  
Power Authority of the State  
of New York  
123 Main Street  
White Plains, NY 10601

**SUBJECT: EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 50.60, "ACCEPTANCE CRITERIA FOR FRACTURE PREVENTION MEASURES FOR LIGHTWATER NUCLEAR POWER REACTORS FOR NORMAL OPERATION," TO ALLOW USE OF CODE CASE N-514 - INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 (TAC NO. M99928)**

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

Sincerely,

A handwritten signature in cursive script, appearing to read "George F. Wunder".

George F. Wunder, Project Manager  
Project Directorate I-1  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure: Exemption

cc w/encl: See next page

James Knubel  
Power Authority of the State  
of New York

Indian Point Nuclear Generating  
Unit No. 3

cc:

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U.S. Nuclear Regulatory Commission  
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Mayor, Village of Buchanan  
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Site Executive Officer  
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Assistant Attorney General  
New York Department of Law  
120 Broadway  
New York, NY 10271

**UNITED STATES OF AMERICA**  
**NUCLEAR REGULATORY COMMISSION**

In the Matter of	)	
	)	
POWER AUTHORITY OF THE STATE	)	Docket No. 50-286
OF NEW YORK	)	
	)	
(Indian Point Nuclear Generating	)	
Unit No. 3)	)	

**EXEMPTION**

I.

The Power Authority of the State of New York (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 that the licensee is subject to all rules, regulations, and orders of the U.S. Nuclear Regulatory Commission (the Commission) now or hereafter in effect.

The facility is a pressurized water reactor located in Westchester County, New York.

II.

The Code of Federal Regulations, 10 CFR 50.60, states that the reactor coolant pressure boundaries for light water reactors must meet the fracture toughness and material surveillance program requirements set forth in Appendices G and H to 10 CFR Part 50.

By letter dated November 3, 1997, the licensee requested an exemption from 10 CFR 50.60 to allow the use of the American Society of Mechanical Engineers (ASME) Code Case N-514 for the determination of the low temperature overpressurization system (LTOP) parameters in place of the margins required by Appendix G to 10 CFR Part 50. The Code Case limits the overpressurization system (OPS) curve to not greater than 110% of the pressure determined to satisfy Appendix G, paragraph G-2215 of ASME Code, Section XI, Division 1,

further reduced to allow for static head due to elevation differences and dynamic head effect of the operation of the four reactor coolant pumps. The Code Case also allows some latitude in determining the OPS enable temperature.

III.

The NRC has established requirements in 10 CFR Part 50 to protect the integrity of the reactor coolant system pressure boundary. As a part of these, 10 CFR Part 50, Appendix G, requires that P-T limits be established for reactor pressure vessels (RPVs) during normal operation and vessel hydrostatic testing and as stated in Appendix G, "The appropriate requirements on...the pressure-temperature limits...must be met for all conditions." The Code of Federal Regulations, 10 CFR 50.60, states that "Proposed alternatives to the described requirements in Appendices G and H of this part or portions thereof may be used when an exemption is granted by the Commission under §50.12." Since the licensee wishes to use Code Case N-514 as opposed to the requirements of Appendix G, an exemption to the regulations is necessary.

IV.

In referring to 10 CFR 50.12 on specific exemptions, the licensee cited special circumstance 10 CFR 50.12(a)(2)(ii) on achieving the underlying purpose of the regulations, 10 CFR 50.12(a)(iii) on undue hardship, and 10 CFR 50.12 (a)(iv) on good faith compliance as their bases for requesting this exemption.

The licensee noted in support of the 10 CFR 50.12(a)(2)(ii) criterion that the underlying purpose of the subject regulations is to establish limits to protect the reactor vessel from brittle failure during low temperature operation and that the OPS provides a physical means of protecting these limits. The licensee proposed that establishing the OPS pressure setpoint per the N-514 provisions such that the vessel pressure would not exceed 110 percent of the P-T limit



allowables "...reduces the unnecessary actuation of the LTOP system due to normal pressure surges that occur during low temperature operation....while maintaining acceptable safety margins." The staff determined that the "acceptable level of safety" using N-514 was based on the conservatism which has been explicitly incorporated into the procedure for developing the P-T limits. This procedure, referenced from Appendix G to Section XI of the ASME Code, includes the following conservatisms: (1) a safety factor of 2 on the pressure stresses; (2) a margin factor applied to  $RT_{NDT}$  using Regulatory Guide 1.99, Revision 2; (3) an assumed 1/4 T flaw with a 6:1 aspect ratio; (4) a limiting material toughness based on dynamic and crack arrest data.

The licensee noted in support of the 10 CFR 50.12(a)(iii) criterion that, as the reactor vessel ages, the operating window for the LTOP system is reduced. This reduced window could lead to inadvertent actuation of the LTOP system which could, in turn, lead to rapid pressure changes.

The licensee noted in support of the 10 CFR 50.12(a)(iv) criterion that the plant is currently in conformance with 10 CFR 50.60 and that relief is being requested in order to maintain sufficient operating margin. The licensee also notes that the staff, in Draft Regulatory Guide 1050, has proposed to endorse Code Case N-514.

The staff reviewed the licensee's rationale to support the exemption request on the basis of 10 CFR 50.12(a)(iii) and the staff concluded that the use of Code Case N-514 would also meet the underlying intent of the regulations. Based upon a consideration of the conservatism which is explicitly defined in the Appendix G methodology (as listed Section 3.0 above), the staff concluded that permitting the OPS setpoint to be established such that the vessel pressure would not exceed 110 percent of the P-T limits would provide an adequate margin of safety against brittle failure of the reactor vessel. This is also consistent with the determination that the staff has reached for other licensees under similar conditions based on the same considerations.

The staff reviewed the licensee's rationale to support the exemption on the basis of

10 CFR 50.12(a)(iii). The staff has previously granted exemptions for other licensees under similar circumstances; therefore, the staff has determined that operating with a reduced LTOP window would result in an undue hardship that is significantly in excess of that incurred by others similarly situated.

The staff reviewed the licensee's rationale to support the exemption on the basis of 10 CFR 50.12(a)(iv) and has determined that the licensee has made a good faith effort to comply with the regulation.

V.

The NRC staff has determined that there are special circumstances present, as specified in 10 CFR 50.12(a)(2)(ii), in that application of 10 CFR 50.60 is not necessary in order to achieve the underlying purpose of this regulation.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, this exemption is authorized by law, will not present an undue risk to public health and safety, and is consistent with the common defense and security.

Therefore, the Commission hereby grants the following exemption.

The Power Authority of the State of New York is exempt from the requirements of 10 CFR 50.60 in that they are permitted to use Code Case N-514 in place of the safety margins required by Appendix G to 10 CFR Part 50 to determine the LTOP parameters.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the quality of the human environment ( 63 FR 17903 ).

This exemption is effective upon issuance. Dated at Rockville, Maryland, this 10th day of April 1998.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Samuel J. Collins, Director  
Office of Nuclear Reactor Regulation