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James Knobel
Senior Vice President and
Chief Nuclear Officer

January 28, 1998
IPN-98-013

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

Subject: **Indian Point 3 Nuclear Power Plant**
Docket No. 50-286
Proposed Exemption From Requirements of 10 CFR 50.60 to
Utilize Alternate Methodology to Determine K_{IT}

Dear Sir:

In accordance with 10 CFR 50.12, this letter requests an exemption from 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention Measures for Light-Water Nuclear Power Reactors For Normal Operation." The exemption request would allow Indian Point 3 to use an alternate methodology to calculate the thermal stress intensity factor (K_{IT}) used in the development of pressure-temperature curves. Attachment I contains a justification for this exemption request. Attachment II contains a description of the alternate methodology used to calculate K_{IT} . In addition, Attachment II compares the K_{IT} results obtained from the ABB-CE methodology to those obtained from the ASME Appendix G methodology, using the details of a sample reactor vessel.

Indian Point 3 is currently operating with Technical Specification requirements which are valid up to 11 effective full power years (EFPYs). Indian Point 3 is expected to exceed 11 EFPYs approximately April 10, 1998. The Authority proposes to utilize the methodology to calculate K_{IT} described in this exemption request to develop curves which extend allowed plant operation from 11 to 13 EFPYs. Therefore, approval of this request is respectfully requested prior to that date.

ABB Combustion Engineering (ABB-CE) asserts that portions of Attachment II contain proprietary information. Therefore, Attachments II and III provide the proprietary and non-

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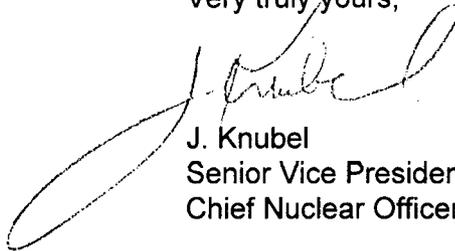
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proprietary versions of this information, respectively. Attachment II includes an ABB-CE affidavit which sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses the considerations listed in 10 CFR 2.790(b)(4). Accordingly, it is respectfully requested that the information which is proprietary to ABB-CE be withheld from public disclosure in accordance with the Commission's regulations. Correspondence with respect to the proprietary aspects of the information contained in Attachment II or the supporting ABB-CE Affidavit should be addressed to:

S. E. Ritterbusch, Manager Licensing Projects
ABB Combustion Engineering
P.O. Box 500
Windsor, CT 06095-5000

This submittal contains no new commitments. If you have any questions, please contact Ms. C. D. Faison.

Very truly yours,



J. Knubel
Senior Vice President and
Chief Nuclear Officer

Attachments: As stated

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

Resident Inspector's Office
Indian Point Unit 3
U.S. Nuclear Regulatory Commission
P.O. Box 337
Buchanan, NY 10511

Mr. George F. Wunder, Project Manager
Project Directorate I-1
Division of Reactor Projects I/II
U.S. Nuclear Regulatory Commission
Mail Stop 14B2
Washington, DC 20555

Attachment I to IPN-98-013

Justification for Exemption From the Requirements of 10 CFR 50.60

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

JUSTIFICATION FOR EXEMPTION FROM THE REQUIREMENTS OF 10 CFR 50.60

In accordance with 10 CFR 50.12(a), the Authority requests an exemption from the regulations of 10 CFR 50.60, "Acceptance Criteria for Fracture Prevention Measures for Light-Water Nuclear Power Reactors For Normal Operation." The exemption request would allow Indian Point 3 to use an alternate methodology to calculate the thermal stress intensity factor (K_{IT}) used in the development of pressure-temperature curves, in lieu of the methodology cited in ASME Boiler and Pressure Vessel Code, Appendix G.

Indian Point 3 uses a methodology provided by ABB Combustion Engineering (ABB-CE) to generate the pressure-temperature curves. This ABB-CE methodology uses an alternate approach to ASME Appendix G to calculate the thermal stress intensity factor. A summary of this methodology is provided in Attachment II. In addition, Attachment II compares the K_{IT} results obtained from the ABB-CE methodology to those obtained from the ASME Appendix G methodology, using the details of a sample reactor vessel. 10 CFR 50.60 specifically states that alternatives to the requirements described in Appendix G may be used when an exemption is granted by the NRC.

Justification for Exemption

10 CFR 50.12(a) states that the NRC may grant exemptions from the requirements of the regulations contained in 10 CFR 50 provided that:

- (1) the exemption is authorized by law;
- (2) the exemption does not present an undue risk to the public health and safety;
- (3) the exemption is consistent with the common defense and security; and
- (4) special circumstances, as defined by 10 CFR 50.12(a)(2), are present.

- (1) The requested exemption is authorized by law.

The NRC is authorized by law to grant this exemption. 10 CFR 50.60 states that the use of alternative methods to 10 CFR 50, Appendix G is acceptable when an exemption is granted by the NRC.

- (2) The requested exemption does not present an undue risk to the public health and safety.

The proposed exemption request has no impact on the safe operation of the plant. An exemption from the requirements would allow the use of an alternate methodology to calculate the thermal stress intensity factor. Specifically, this methodology uses a polynomial fit of the temperature profile and superposition using influence coefficients to calculate K_{IT} . As shown in Attachment II, the results of this methodology are comparable to the results obtained using the ASME Appendix G methodology. Therefore, this exemption request does not present an undue risk to the public health and safety.

- (3) The requested exemption will not endanger the common defense and security.

The common defense and security are not affected by this exemption request.

- (4) Special circumstances are present which necessitate the request for an exemption.

10 CFR 50.12(a)(2) states that the NRC will not consider granting an exemption unless special circumstances are present. This exemption meets the special circumstances listed in 10 CFR 50.12(a)(2)(ii).

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 primary purpose of 10 CFR 50.60 is to protect the reactor vessel against nonductile failure. The use of the ABB-CE alternate methodology requested by this exemption provides greater operational flexibility while still maintaining reactor vessel integrity. In addition, the use of the ABB-CE methodology to generate pressure-temperature curves yields comparable results to the use of the ASME Appendix G methodology. Therefore, the reactor vessel is protected against nonductile failure and the underlying purpose of the rule is achieved.

Conclusion

The Authority concludes that the use of the ABB-CE alternate methodology to calculate the thermal stress intensity factor (K_{IT}) provides greater operational flexibility while providing adequate protection of the reactor vessel against nonductile failure.

Attachment II to IPN-98-013

**Technical Methodology Paper Comparing ABB Combustion Engineering
Pressure Temperature Curve to ASME Section III, Appendix G**

Proprietary Version

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

AFFIDAVIT PURSUANT

TO 10 CFR 2.790

I, S.E. Ritterbusch, depose and say that I am the Manager, Licensing Projects, of Combustion Engineering, Inc., duly authorized to make this affidavit, and have reviewed or caused to have reviewed the information which is identified as proprietary and referenced in the paragraph immediately below. I am submitting this affidavit in conjunction with the application of New York Power Authority and in conformance with the provisions of 10 CFR 2.790 of the Commission's regulations.

The information for which proprietary treatment is sought is contained in the following document:

063-PENG-ER-096, Rev. 00, "Technical Methodology Paper Comparing ABB/CE PT Curve to ASME Section III, Appendix G," January 20, 1998

This document has been appropriately designated as proprietary.

I have personal knowledge of the criteria and procedures utilized by Combustion Engineering in designating information as a trade secret, privileged or as confidential commercial or financial information.

Pursuant to the provisions of paragraph (b) (4) of Section 2.790 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure, included in the above referenced document, should be withheld.

1. The information sought to be withheld from public disclosure, is owned and has been held in confidence by Combustion Engineering. It consists of intermediate calculations addressing the development of the thermal stress intensity factor, K_{IT} . The calculation includes the use of finite

element-developed influence coefficients under several thermal loadings which are then combined to develop K_{IT} .

2. The information consists of test data or other similar data concerning a process, method or component, the application of which results in substantial competitive advantage to Combustion Engineering.
3. The information is of a type customarily held in confidence by Combustion Engineering and not customarily disclosed to the public. Combustion Engineering has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The details of the aforementioned system were provided to the Nuclear Regulatory Commission via letter DP-537 from F. M. Stern to Frank Schroeder dated December 2, 1974. This system was applied in determining that the subject document herein is proprietary.
4. The information is being transmitted to the Commission in confidence under the provisions of 10 CFR 2.790 with the understanding that it is to be received in confidence by the Commission.
5. The information, to the best of my knowledge and belief, is not available in public sources, and any disclosure to third parties has been made pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence.
6. Public disclosure of the information is likely to cause substantial harm to the competitive position of Combustion Engineering because:
 - a. A similar product is manufactured and sold by major pressurized water reactor competitors of Combustion Engineering.
 - b. Development of this information by Combustion Engineering required hundreds of thousands of dollars and thousands of

manhours of effort. A competitor would have to undergo similar expense in generating equivalent information.

- c. In order to acquire such information, a competitor would also require considerable time and inconvenience to develop an equivalent calculational method for development of the thermal stress intensity factor, K_{1T} .
- d. The information consists of intermediate calculations using finite element-developed influence coefficients under several thermal loadings which are then combined to develop K_{1T} , the application of which provides a competitive economic advantage. The availability of such information to competitors would enable them to modify their product to better compete with Combustion Engineering, take marketing or other actions to improve their product's position or impair the position of Combustion Engineering's product, and avoid developing similar data and analyses in support of their processes, methods or apparatus.
- e. In pricing Combustion Engineering's products and services, significant research, development, engineering, analytical, manufacturing, licensing, quality assurance and other costs and expenses must be included. The ability of Combustion Engineering's competitors to utilize such information without similar expenditure of resources may enable them to sell at prices reflecting significantly lower costs.
- f. Use of the information by competitors in the international marketplace would increase their ability to market nuclear steam supply systems by reducing the costs associated with their technology development. In addition, disclosure would have an adverse economic impact on Combustion

Engineering's potential for obtaining or maintaining foreign licensees.

Further the deponent sayeth not.



S.E. Ritterbusch, Manager
Licensing Projects

Sworn to before me

this 21st day of January, 1998



Laurie J. White
Notary Public

My commission expires: 8/31/99