



Public Service of New Hampshire

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New Hampshire Yankee Division

SBN- 756  
T.F. B7.1.2

United States Nuclear Regulatory Commission  
Washington, D. C. 20555

Attention: Mr. George W. Knighton, Chief  
Licensing Branch No. 3  
Division of Licensing

- References:
- (a) Construction Permits CPPR-135 and CPPR-136, Docket Nos. 50-443 and 50-444
  - (b) PSNH Letter SBN-703, dated August 9, 1984, "Alternate Pipe Break Design Criteria", J. DeVincentis to G. W. Knighton
  - (c) Generic Letter 84-04, dated February 1, 1984, "Safety Evaluation of Westinghouse Topical Reports Dealing With Elimination of Postulated Pipe Breaks in PWR Primary Main Loops", from D. G. Eisenhut
  - (d) NUREG-1061, Volume 3, "Report of the US Nuclear Regulatory Commission Piping Review Committee", published November 1984

Subject: Reactor Coolant Loop Pipe Break Elimination Benefits Summary

Dear Sir:

We previously requested [Reference (b)] that the NRC "approve the elimination of postulated breaks in the Reactor Coolant Loop (RCL) primary piping of Seabrook Station Units 1 and 2". We also indicated that NRC "acceptance of our request for elimination of RCL primary pipe breaks would result in significant benefits in terms of reduced occupational radiation exposure and cost savings over the life of the units".

Attachment A to this letter, which was prepared pursuant to the guidance set forth in Reference (c), quantifies the benefits that will result from the granting of our request for partial exemption from General Design Criteria 4 (GDC 4) of 10CFR50 Appendix A. The granting of this partial exemption from GDC 4 will eliminate the need to postulate longitudinal and circumferential pipe breaks in the RCL primary piping (hot leg, cold leg, and crossover leg piping). This will eliminate the need to install associated pipe whip restraints in the RCL primary piping and eliminate the requirement to analyze and design for the dynamic effects of these breaks including jet impingement, reactor cavity pressurization and load combination assumptions.

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A PDR

*Boo!*  
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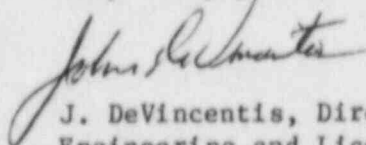
PSNH's evaluation of the potential cost savings and operational benefits is provided in Attachment A. These benefits include an approximate \$6.1 million savings associated with the design, fabrication, and installation of hardware, and the man-rem cost of associated maintenance and handling. The corresponding occupational radiation exposure reduction is anticipated to be 1,380 man-rem. This benefits evaluation was performed for both units over their 40-year life. The actual benefits realized are expected to be higher than those presented, due to the conservative nature of our assumptions and other expected future attributes.

In summary, we have demonstrated that our request for partial exemption from GDC 4, if granted, will result in significant cost savings, occupational radiation exposure reduction, and other operational benefits over the life of the units. Your approval of this request would be consistent with the following conclusion, which the NRC Pipe Break Task Group reported in NUREG-1061, Volume 3 [Reference (d)]:

"The elimination of the DEGB at terminal ends of large primary pipes in pressurized water reactors (PWRs), and the control of maximum flaw length in piping in general should permit an elimination of existing restraints or removal of restraints as a design requirement. Consequently, asymmetric reactor pressure vessel (RPV) loads, jet impingement loads, and reactor cavity over-pressurization that results from a postulated DEGB need not be considered." (p. ES-2)

Please note that construction and engineering decisions are being dictated by the expected approval of our request for partial exemption from GDC 4; therefore, we would hope that any concerns or additional information needs would be brought to our attention expeditiously.

Very truly yours,



J. DeVincentis, Director  
Engineering and Licensing

Attachment

cc: Atomic Safety and Licensing Board Service List

William S. Jordan, III  
Diane Curran  
Harmon, Weiss & Jordan  
20001 S Street N.W.  
Suite 430  
Washington, D.C. 20009

Robert G. Perlis  
Office of the Executive Legal Director  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Robert A. Backus, Esquire  
116 Lowell Street  
P.O. Box 516  
Manchester, NH 03105

Philip Ahrens, Esquire  
Assistant Attorney General  
Department of the Attorney General  
Augusta, ME 04333

Mr. John B. Tanzer  
Designated Representative of  
the Town of Hampton  
5 Morningside Drive  
Hampton, NH 03842

Roberta C. Pevear  
Designated Representative of  
the Town of Hampton Falls  
Drinkwater Road  
Hampton Falls, NH 03844

Mrs. Sandra Cavutis  
Designated Representative of  
the Town of Kensington  
RFD 1  
East Kingston, NH 03827

Jo Ann Shotwell, Esquire  
Assistant Attorney General  
Environmental Protection Bureau  
Department of the Attorney General  
One Ashburton Place, 19th Floor  
Boston, MA 02108

Senator Gordon J. Humphrey  
U.S. Senate  
Washington, DC 20510  
(Attn: Tom Burack)

Diana P. Randall  
70 Collins Street  
SEabrook, NH 03874

Donald E. Chick  
Town Manager  
Town of Exeter  
10 Front Street  
Exeter, NH 03833

Brentwood Board of Selectmen  
RED Dalton Road  
Brentwood, New Hampshire 03833

Edward F. Meany  
Designated Representative of  
the Town of Rye  
155 Washington Road  
Rye, NH 03870

Calvin A. Canney  
City Manager  
City Hall  
126 Daniel Street  
Portsmouth, NH 03801

Dana Bisbee, Esquire  
Assistant Attorney General  
Office of the Attorney General  
208 State House Annex  
Concord, NH 03301

Anne Verge, Chairperson  
Board of Selectmen  
Town Hall  
South Hampton, NH 03842

Patrick J. McKeon  
Selectmen's Office  
10 Central Road  
Rye, NH 03870

Carole F. Kagan, Esq.  
Atomic Safety and Licensing Board Panel  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Mr. Angie Machiros  
Chairman of the Board of Selectmen  
Town of Newbury  
Newbury, MA 01950

Town Manager's Office  
Town Hall - Friend Street  
Amesbury, Ma. 01913

Senator Gordon J. Humphrey  
1 Pillsbury Street  
Concord, NH 03301  
(Attn: Herb Boynton)

Richard E. Sullivan, Mayor  
City Hall  
Newburyport, MA 01950

ATTACHMENT AEstimated Cost Savings/Operational Benefit Summary  
for Elimination of RCL Primary Pipe Breaks

<u>Category</u>	<u>*Cost Savings (1985 rates)</u>	<u>Operational Benefits</u>
1. Elimination of RCL Pipe Whip Restraints (PWR)	PWR Installation (to complete Unit 2) - \$520K  PWR hot shimming - \$125K  **Man-rem cost - \$300K	Substantial improvement in quality of ISI  Eliminates need to maintain gap clearances and the potential for inadvertent thermal movement restriction  Reduces RCL heat loss to containment  Estimated personnel dose reduction (100 man-rems)
2. Elimination of neutron shield energy absorption (EAB) pads	EAB pad design, fabrication, and installation - \$210K  EAB pad removal and reinstallation during each refueling - \$100K  **Man-rem cost - \$3.85M	Reduced congestion in reactor cavity    Estimated personnel dose reduction (1,280 man-rems)
3. Elimination of jet shields and/or equipment relocation	Jet shield design, fabrication, and installation - \$1.0M	Reduced congestion resulting in personnel dose reduction
<b>TOTAL</b>	<u>\$6.105 Million</u>	<u>1,380 man-rems</u>

\* Both units unless noted otherwise. Note that the Unit 2 status is indeterminate.

\*\* Anticipated radiation worker charges based on typical \$/man-rem billed by industry.