97-651

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

MEMORANDUM

July 28, 1997

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-14

Reference: Letter from C. E. Carpenter, Jr., (NRC) to J. T. Beckham, Jr., (BWRVIP Chairman), "Proprietary Request for Additional Information - Review of BWR Vessel and Internals Project Proprietary Report, BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Stainless Steel RPV Internals (BWRVIP-14)," dated December 9, 1996.

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information transmitted by the NRC letter referenced above. As indicated in the referenced NRC letter, since the enclosed information concerns a report that the NRC staff has found to be proprietary in nature, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject please contact Robin Dyle of Southern Nuclear at (205) 992-7121.

Sincerely,

Larry Steinert for

Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power & Light Company

97-604

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

July 7, 1997

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: Figures for BWRVIP Response to NRC Request for Additional Information on BWRVIP-03

References:
1. Letter from Carl Terry (BWRVIP Chairman) to Document Control Desk (NRC), "BWRVIP Response to NRC Request for Additional Information on BWRVIP-03," dated June 30, 1997.
2. Letter from J. T. Beckham, Jr., (BWRVIP Chairman) to Document Control Desk (NRC), "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), EPRI Report TR-105696, October 1995," dated November 10, 1995.

Enclosed are 10 copies of the figures associated with the BWRVIP response to the NRC Request for Additional Information (RAI) on BWRVIP-03 that was transmitted to the NRC by Reference 1 identified above.

Inadvertently, the BWRVIP response to the NRC RAI on BWRVIP-03 transmitted by Reference 1 did not include the figures referred to in that response. The enclosed figures are those referred to in Reference 1 above.

The enclosed document contains proprietary information relating to proprietary material previously transmitted to the NRC staff. Therefore, the request for withholding the previous material from public disclosure transmitted to the NRC staff by Reference 2 above also applies to the enclosed information.

If you have any questions on this subject please call Steve Leonard of Niagara Mohawk Power Company at (315) 349-4039.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Chairman, BWR Vessel and Internals Project

In accordance with the Freedom of Information Act, exemptions 4
FOIA- 2000-0178

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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BWRVIP

BWR Vessel &
Internals Project ——— *Issue Management and Resolution*

June 30, 1997

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-03

References:
1. Letter from C. E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Vice-Chairman), "Proprietary Request for Additional Information - Review of BWR Vessel and Internals Project Reports, BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines, (BWRVIP-03)," dated March 12, 1997.
2. Letter from J. T. Beckham, Jr., (BWRVIP Chairman) to Document Control Desk (NRC), "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), EPRI Report TR-105696, October 1995," dated November 10, 1995.

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information identified in Reference 1 above.

The enclosed document contains proprietary information relating to proprietary material previously transmitted to the NRC staff. Therefore, the request for withholding the previous material from public disclosure transmitted to the NRC staff by Reference 2 above also applies to the enclosed information.

If you have any questions on this subject please call Steve Leonard of Niagara Mohawk Power Company at (315) 349-4039.

Sincerely,

CTerry

Carl Terry
Niagara Mohawk Power Company
Chairman, BWR Vessel and Internals Project

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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BWRVIP

BWR Vessel &
Internals Project — *Issue Management and Resolution*

MEMORANDUM

June 16, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: Proprietary version of "Configurations of Safety-Related BWR Reactor Internals (BWRVIP-15)", March, 1996

On April 29, 1997 members of the BWRVIP Assessment Committee presented the results of the BWRVIP Safety Assessment Report (BWRVIP-06) to the NRC at a meeting in San Jose, CA. During this meeting the NRC requested copies of the above-referenced report. In response to this request, please find two copies of the above-referenced report. These copies are being provided for information only to support your completion of the BWRVIP-06 safety evaluation.

Please note that the enclosed proprietary document contains proprietary information . A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Robin Dyle, BWRVIP Repair Committee Chairman, Southern Nuclear, at (205) 992-7121.

Sincerely,

[signature]

Carl Terry
Niagara Mohawk Power Company
Chairman, BWR Vessel and Internals Project

Enclosure

Change: PDR 1 LTR ENCL 1 to pnp RD-10-1
NIAC 1 to pnp

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EPRI
Electric Power
Research Institute

Powering Progress through Innovative Solutions

June 16, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-2738

Subject: TR-106368 "BWRVIP Vessel and Internals Project: Configurations of Safety-Related BWR Reactor Internals (BWRVIP-15)", March, 1996

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Two copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (415) 855-2845. Questions on the contents of the Report should be directed to M. Campbell of EPRI at (415) 855-2879.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
Intellectual Property Department

Enclosures

c: M. Campbell

RE: TR-106368 "BWRVIP Vessel and Internals Project: Configurations of Safety-Related BWR Reactor Internals (BWRVIP-15)", March, 1996.

I. MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

June 16, 1997

Mark D. Fox, Esq.

Subscribed and sworn before me this day: June 16, 1997

Sumi Yamashita, Notary Public

97-506

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

June 13, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: Responses to Requests for Additional Information Regarding BWRVIP Recommendations for BWR Reactor Pressure Vessel Shell Weld Inspections

References:
1. Letter from Brian Sheron (NRC) to Carl Terry (BWRVIP Vice-Chairman), "Request for Additional Information for Topical Report EPRI TR-105697, BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)," dated May 20, 1997.
2. Letter from J. T. Beckham, Jr. (BWRVIP Chairman) to Document Control Desk (NRC), "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)," dated September 28, 1995.

Enclosed are 10 copies of each of the following items:

1. Summary of BWRVIP Survey - June 6, 1997. This is an update of the BWR reactor pressure vessel inspection information in Appendix A of BWRVIP-05. This information is provided in response to the NRC Request for Additional Information transmitted to the BWRVIP by Reference 1 above. Please note that in addition to an increase in the amount of weld inspected to date, the total amount of weld available has been increased. This correction is based on re-verification of the survey information. A plant-by-plant breakdown has not been included. If such a breakdown is needed, it could be provided in approximately two weeks.
2. GE Response to Request for Support by EPRI/BWRVIP to Aid in the Evaluation of BWRVIP-05 entitled, "BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)," EPRI TR-105697, dated September 1995. This information is provided in response to several informal requests from the NRC staff.

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

[redacted]

The enclosed documents contain proprietary information relating to proprietary material previously transmitted to the NRC staff. Therefore, the request for withholding the previous material from public disclosure transmitted to the NRC staff by Reference 2 above also applies to the enclosed information.

If you have any questions on this subject please call Robin Dyle of Southern Nuclear at (205) 992-7121.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Chairman, BWR Vessel and Internals Project

[redacted]

97-481

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

June 4, 1997

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: Detailed Programming Information for VIPER

Reference: Letter from Carl Terry (BWRVIP Chairman) to Document Control Desk (NRC), "BWRVIP Vessel Inspection Program Evaluation for Reliability (VIPER) Software and Users Manual," dated June 3, 1997

Enclosed is one copy of a document entitled "VIPER Computer Program Detailed Programming Information." This information is being provided in response to a verbal request from the NRC staff.

The enclosed document provides information on the VIPER program including identification of the functions in each source file, a description of each function, the function call hierarchy structure, and a description of the variables for the VIPER program.

The enclosed document contains proprietary information relating to proprietary material previously transmitted to the NRC staff. Therefore, the request for withholding the previous material from public disclosure transmitted to the NRC staff by the letter referenced above also applies to the enclosed information.

If you have any questions on this subject please call Warren Bilanin of EPRI at (415) 855-2340.

Sincerely,

RD-10-1

Carl Terry
Niagara Mohawk Power Company
Chairman, BWR Vessel and Internals Project

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Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, [illegible] NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 27, 1997

MEMORANDUM TO: Jack R. Strosnider, Chief
Materials & Chemical Engineering Branch
Division of Engineering

FROM: C. E. Carpenter, Jr., Lead Project Manager
Materials & Chemical Engineering Branch
Division of Engineering

SUBJECT: APRIL 29 - 30, 1997, MEETING WITH BOILING WATER REACTORS VESSEL & INTERNALS PROJECT (BWRVIP) REGARDING BWRVIP-06

On Tuesday, April 29, and Wednesday, April 30, 1997, several members of the NRC staff participated in a public meeting with members of the Boiling Water Reactors Vessel & Internals Project (BWRVIP), the Electric Power Research Institute (EPRI), and the General Electric Company (GE) at the GE facility in San Jose, California. The meeting was held at the request of the NRC staff to resolve NRC staff concerns regarding the review of the EPRI proprietary report TR-105707, "BWR Vessel and Internals Project, Safety Assessment of BWR Reactor Internals (BWRVIP-06)," dated October 5, 1995. Attachment 1 is the meeting participants. Attachment 2 is the BWRVIP April 29, 1997, presentation viewgraphs. Attachment 3 is the non-proprietary version of the safety assessment discussed during the first day of the meeting, and Attachment 4 is the proprietary version of the safety assessment.

During the April 29, 1997, portion of the meeting, the BWRVIP presented a review of the BWRVIP-06 objectives and scope, and discussed the general approach to the evaluation, including the key assumptions that went into the report. The BWRVIP, for the purposes of the evaluation, assumed that each component or system analyzed was fully failed, and then the consequences of these failures, including the impact on plant response, were determined. Short- and/or long-term actions to mitigate the consequences were identified, with the acceptance criteria being the capability to achieve a safe shutdown condition. The BWRVIP further assumed that some degradation could be acceptable in the short term, based on (a) being able to detect by plant instrumentation during operation, (b) having redundancy in system and/or component function, or (c) inspecting to minimize the possibility of significant undetected cracking.

The BWRVIP-06 report evaluated the safety function of each component, with an acceptance criteria of being able to achieve safe shutdown, not to maintain the original design. It describes the component or system, including identifying all potential failure locations, evaluates the consequences of a complete failure at each location, and defines any required actions needed to mitigate the effects of a failure. The BWRVIP-06 report determined that no short-term actions are necessary for postulated failures since all BWRs have a sufficient level of safety, as based on detectability of component failure by existing instrumentation and currently required inspections, structural and/or functional redundancy, and the low probability of a challenging event. Long-term actions were the basis for the component prioritization schedule.

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The BWRVIP also presented a summary (attachment 2) of a Level 1 quantitative safety assessment of BWR internals that was performed by their contractor Science Applications International Corporation (SAIC). The BWRVIP committed to providing the full safety assessment to the NRC staff for consideration during the review of the BWRVIP-06 document. Information regarding this assessment was provided to cognizant staff in the Office of Nuclear Regulatory Research (RES) for inclusion in the confirmatory research that is being performed with regards to degradation of BWR internals.

SAIC's methodology utilized a qualitative assessment to identify potential accident scenarios, and then constructed generic mitigating system fault trees for the various BWR types. This was done by surveying BWR individual plant evaluations (IPEs) performed to date, identifying important component failure modes, and determining the most common and conservative system alignments for modeling. Generic data (e.g., generic LOCA frequencies, seismic hazard curves and component seismic fragilities, and other information from NUREG-1150) was then used to quantify the models. Unavailability of some information required caused a bounding approach to be taken in performing the quantitative assessment.

The bounding assessment initially assumed that each individual component or system evaluated was failed (e.g., probability of failure equals 1.0), then the frequency of all analyzed accident scenarios was determined. If the frequency of core damage was less than 1.0×10^{-6}/year, no further analyses were performed for that component. However, if the frequency of core damage was greater than 1.0×10^{-6}/year, then the individual component or system was re-evaluated using the crack growth model to calculate component failure probabilities and the Level 1 quantitative safety assessment was reevaluated to determine the core damage frequency. The Monte Carlo crack growth model that the BWRVIP used requires (a) probability (assumed to be 1.0) that a crack exists in a weld, (b) the crack growth rate data, (c) the critical crack size resulting in component failure, and (d) a time period for crack growth. Two constant crack growth rates were assumed - a pre-1985 rate and a post-1985 rate - to correspond with EPRI chemistry guidelines. The critical crack size was assumed to extend through the weld thickness, and to range between 70% and 100% of the weld length.

The BWRVIP concluded that their bounding assessment had results which indicate that (a) failure of any of the components / systems analyzed will not result in significant safety concerns, (b) confirm the conclusion of the qualitative safety assessment that no short-term actions are required, (c) calculated core damage frequencies are conservative, and (d) the generic results are applicable for all BWR/2s through BWR/6s.

During the April 30, 1997, portion of the meeting, the NRC staff and the BWRVIP discussed specific questions related to the review of the BWRVIP-06 report; these questions will be addressed in the BWRVIP-06 safety evaluation.

The NRC staff also discussed briefly the reviews of the BWRVIP Reports "Core Spray Internals Inspection and Flaw Evaluation Guidelines (BWRVIP-18)," dated July 26, 1996, and "Internal Core Spray Piping and Sparger Repair Design

Criteria (BWRVIP-19)," dated September 17, 1996, and the BWRVIP's responses to the NRC staff's Requests for Additional Information (RAIs) on these two documents. Due to recent collateral reviews performed on other components, the NRC staff recommended that the BWRVIP consider in their RAI responses the possible effects of other plant transients on the need for core spray.

The BWRVIP staff and the NRC staff agreed to continue to meet to discuss emerging technical issues, status of technical reviews and resource allocation. Further meetings will be scheduled as needed.

Attachments:
1. Meeting Participants
2. BWRVIP Viewgraphs
3. Quantitative Safety Assessment (non-proprietary)
4. Quantitative Safety Assessment (proprietary)

DISTRIBUTION: see next page

cc:

Robert Keaten, Executive Chairman
BWRVIP Inspection Task
GPU Nuclear
One Upper Pond Road, Bldg F
Parsippany, NJ 07054

Carl Terry, Executive Chairman
BWRVIP Assessment Task
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

George Jones, Executive Chairman
BWRVIP Mitigation Task
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A6-1
Two North Ninth Street
Allentown, PA 18101

Bill Campbell, Executive Chairman
BWRVIP Repair Task
Carolina Power and Light Company
411 Fayetteville Street
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Warren Bilanin, EPRI BWRVIP Manager
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40 Inverness Center Parkway
Birmingham, AL 35201

Vaughn Wagoner, Technical Chairman
BWRVIP Integration Task
Carolina Power & Light Company
One Hanover Square 8C1
P.O. Box 1551
Raleigh, NC 27612

NRC/BWRVIP April 29 - 30, 1997, Meeting Participants

NAME	ORGANIZATION	PHONE	FAX
R. A. Hermann	NRC/NRR/DE/EMCB	301-415-2768	301-415-2444
C. E. Carpenter	NRC/NRR/DE/EMCB	301-415-2169	301-415-2444
K. A. Kavanagh	NRC/NRR/DSSA/SRXB	301-415-3743	301-415-3577
J. E. Lyons	NRC/NRR/DSSA/SRXB	301-415-2895	301-415-3577
Robin Dyle	SNC/BWRVIP	205-992-7121	205-992-5793
Bob McCall	Peco Energy Co.	610-640-6389	610-640-6582
Robert Scott	Com Ed	630-663-7667	630-663-7171
Bob Carter	EPRI	704-547-6019	704-547-6035
Ken Wolfe	EPRI	415-855-2578	415-855-2774
Jeff LaChance	SAIC	505-842-7903	505-842-7798
Tom Caine	GE	408-925-4047	408-925-1687
Ron Horn	GE	408-925-3515	408-925-4175
Sam Ranganath	GE	408-925-6825	408-925-5269
Don Knecht	GE		

Attachment 1

Safety Assessment of BWR Reactor Internals

BWRVIP-06

Presented by:

Robin Dyle - SNC

April 29, 1997

ATTACHMENT 2

Purpose of Meeting

- Review and explain the approach used to perform BWRVIP Safety Assessment (BWRVIP-06)
- Present results of the PRA confirmatory evaluation
- Present results of individual component evaluations and final prioritization
- Q&A session with NRC staff

Outline

- Objectives of BWRVIP-06
- Approach
- Scope
- Evaluation Procedure
- Results
- Prioritization
- BWRVIP Schedule
- PRA Evaluation
- Review of Individual Component Evaluations
- Conclusions

Objectives of BWRVIP-06

- Perform a qualitative safety assessment of BWR reactor internals and attachments (BWRVIP-06) to assure continuing safe operation (assumes loss of integrity in welded and bolted connections)
- Define short-term and long-term actions needed to ensure safe operation
- Develop overall prioritization of components

Philosophy

- **Individual component locations are assumed to be fully failed**
  - Failures assumed to be at welds and bolted connections since these locations are most logical to assume failure
  - Based on original component design
- **Components evaluated individually and consequences of failure determined**
  - Impact on accident consequences and plant response

Philosophy (Con't)

- **Evaluate the safety functions of each component. These include:**
  - Maintaining coolable geometry
  - Maintaining control rod insertion times
  - Maintaining reactivity control
  - Assuring core cooling effectiveness
  - Assuring instrumentation availability
- **Acceptance criteria is to achieve safe shutdown, not to maintain original design**

Philosophy (Con't)

- **Failure location can be acceptable for achieving safe shutdown based on:**
  - Detectability - by plant instrumentation during operation
  - Redundancy - system and structural
  - Inspection - minimizes possibility of significant undetected cracking
- **Actions identified as either short-term or long-term**

Scope

- **Reactor internal components (boundary is nozzle safe-ends)**
  - Safety Related - components that must be relied upon to remain functional during and following design basis event to ensure:
    - » The integrity of the reactor coolant pressure boundary
    - » The capability to shut down the reactor and maintain it in a safe shutdown condition
    - » The capability to prevent or mitigate the consequences of accidents that could result in potential off-site exposures comparable to 10CFR100 guidelines
  - Non Safety-Related - components not required to achieve safe shutdown
  - Loose Parts - impact on fuel bundle flow blockage, control rod drive operation and chemical reactions with other internals

Scope (Con't)

- **Does not include:**
  - Reactor vessel shell and other pressure boundary components
  - Consumables (fuel, control rods, etc.)

Safety Related Components

- Control Rod Guide Tube
- CRD Housing/Stub Tube
- Core Plate
- Core Spray Sparger
- LPCI Coupling
- Incore Housing/Dry Tube
- Shroud Support
- Top Guide
- SLC/Core Plate DP
- Core Spray Piping
- Jet Pump Assembly
- Orificed Fuel Support
- Shroud
- Access Hole Cover
- Vessel Instrumentation

Non-Safety Related Components

Steam Dryer

Shroud Head and Separators

Feedwater Sparger

Surveillance Capsule Holder

Evaluation Process

- **Description of hardware**
  - Identification of all potential failure locations
- **Safety assessment**
  - Evaluation of consequences of complete failure at each location
- **Conclusions**
  - Definition of required short and long term actions
- **Example - Core Spray**
  - Refer to Pages 38-50 of BWRVIP-06

Results

- **No short term actions required**
  - All BWR product lines have sufficient level of safety based on:
    - » Detectability of component failure by online instrumentation
    - » Structural and/or functional redundancy
    - » Detectability of component failure by current inspections
    - » Low probability of challenging event
- **Long-term actions**
  - Basis for component prioritization
  - Not required for all components

Considerations for Prioritization

- Safety function
- Cracking consequences
- Operator/system response
- Detectability
- Routinely inspected?
- Inspection/service history

Component Prioritization Matrix

Priority	Component
High	Shroud
	Core Spray Piping and Sparger
	Shroud Support
	Top Guide
	Core Plate
	SLC
Medium	Jet Pump Assembly
Low	CRD Guide Tube
	CRD Stub Tube
	In-Core Housing
	Dry Tube
	Instrument Penetrations
	Vessel ID Brackets
	LPCI Coupling

BWRVIP Schedule

BWRVIP REPORTS/NRC REVIEW STATUS
April 22, 1997

Report	Submittal Date	Initial NRC Review	RAI/Response Process	SER Issued
Assessment:				
1. shroud I&E, Rev. 0	9/94	complete	complete	9/94
2. shroud I&E, Rev. 1	4/95	complete	complete	6/95
3. shroud I&E, Rev. 2	10/96	ongoing	-	-
4. RPV weld inspection	9/95	4-5/96	6/96	-
5. safety assessment	10/95	5/96	12/96	-
6. GL 92-01, Rev. 1, Sup. 1	11/95	complete	complete	10/96
7. shroud reinspection	2/96	5/96	10/96	-
8. SS crack growth	3/96	12/96	ongoing	-
9. core spray I&E	7/96	1/97	ongoing	-
10. core plate I&E	12/96	3/97	ongoing	-
11. top guide I&E	12/96	3/97	ongoing	-
12. jet pump riser	12/96	ongoing	-	-
13. SLC I&E	3/97	-	-	-
14. shroud support I&E	6/97	-	-	-
15. jet pump assembly I&E	6/97	-	-	-
16. CRD guide/stub tube I&E	9/97	-	-	-
17. In-core/dry tube I&E	9/97	-	-	-
18. LPCI coupling I&E	9/97	-	-	-
19. Instrument Pen. I&E	12/97	-		-
20. Internals brackets I&E	12/97	-	-	-
21. Low alloy crack growth	12/97	-	-	-
22. Ni-base crack growth	12/97	-	-	-

Report	Submittal Date	Initial NRC Review	RAI/Response Process	SER Issued
Inspection:				
1. shroud NDE uncertainty	11/94	complete	complete	6/95
2. RPV/internals (BWRVIP-03)	11/95	3/97	ongoing	-
3. core spray visual	4/96	3/97	ongoing	-
4. SLC stds.	8/97	-	-	-
5. core spray UT	9/97	-	-	-
6. shroud support insp. stds.	12/97	-	-	-
7. jet pump assembly stds.	12/97	-	-	-
8. core plate stds.	12/97	-	-	-
9. top guide stds.	12/97	-	-	-
Repair:				
1. shroud repair design criteria	9/94	complete	complete	9/94
2. shroud repair design format/content	10/95	complete	complete	7/96
3. core spray repair design criteria	9/96	1/97	ongoing	-
4. CRD roll expansion	11/96	ongoing	-	-
5. core spray replacement design criteria	3/97	ongoing	-	-
6. core spray overlay repair	2/97	-	-	-
7. weldability of irradiated materials	4/97	-	-	-
8. underwater flux core welding	5/97	-	-	-
9. SLC repair criteria	8/97	-	-	-
10. jet pump repair criteria	12/97	-	-	-
11. top guide repair criteria	12/97	-	-	-
12. core plate repair criteria	12/97	-	-	-

Report	Submittal Date	Initial NRC Review	RAI/Response Process	SER Issued
Mitigation:				
1. credit for mitigation	12/97	-	-	-

PRA Evaluation

- **Perform risk-based PRA analysis of consequences of failure of internal components due to SCC to provide additional confidence in conclusions of safety assessment report**
- **Scope: Eight components evaluated**
  - Those components from safety assessment report whose failure in combination with low probability event could result in increased core damage frequency
  - CRD, core plate, core spray piping, CS sparger, jet pump, LPCI coupling, access hole covers, top guide

Conclusions

- All BWR product lines possess a sufficient level of safety based on detection of component failure, structural redundancy and low probability
- Core damage frequencies below levels of concern
- Analysis supports BWRVIP work prioritization

Quantitative Safety Assessment Of BWR Reactor Internals

Presented By:
Jeff LaChance
Science Applications International Corporation
April 29, 1997

ATTACHMENT 3

Presentation Outline

- Introduction
- Overview Of Probabilistic Risk Assessment (PRA)
- Application Of PRA To Assessment Of BWR Reactor Internals
- Example Quantitative Assessment (Core Spray Piping)
- Summary Of Component Analyses/Results

Introduction

- Purpose Of Quantitative Assessment Is To Confirm Results Of Qualitative Assessment
- PRA Techniques Used To Evaluate Potential For Core Damage Due To SCC-Induced Failure Of Reactor Internals
- Generic Evaluations Were Performed Using Conservative System Alignments

Components Quantitatively Evaluated

- Control Rod Guide Tubes, CRD Housings, & Stub Tubes
- Core Plate
- Core Spray Piping
- Core Spray Spargers
- Jet Pump Assembly
- LPCI Couplings
- Access Hole Covers
- Top Guide/Grid

Brief History Of PRA

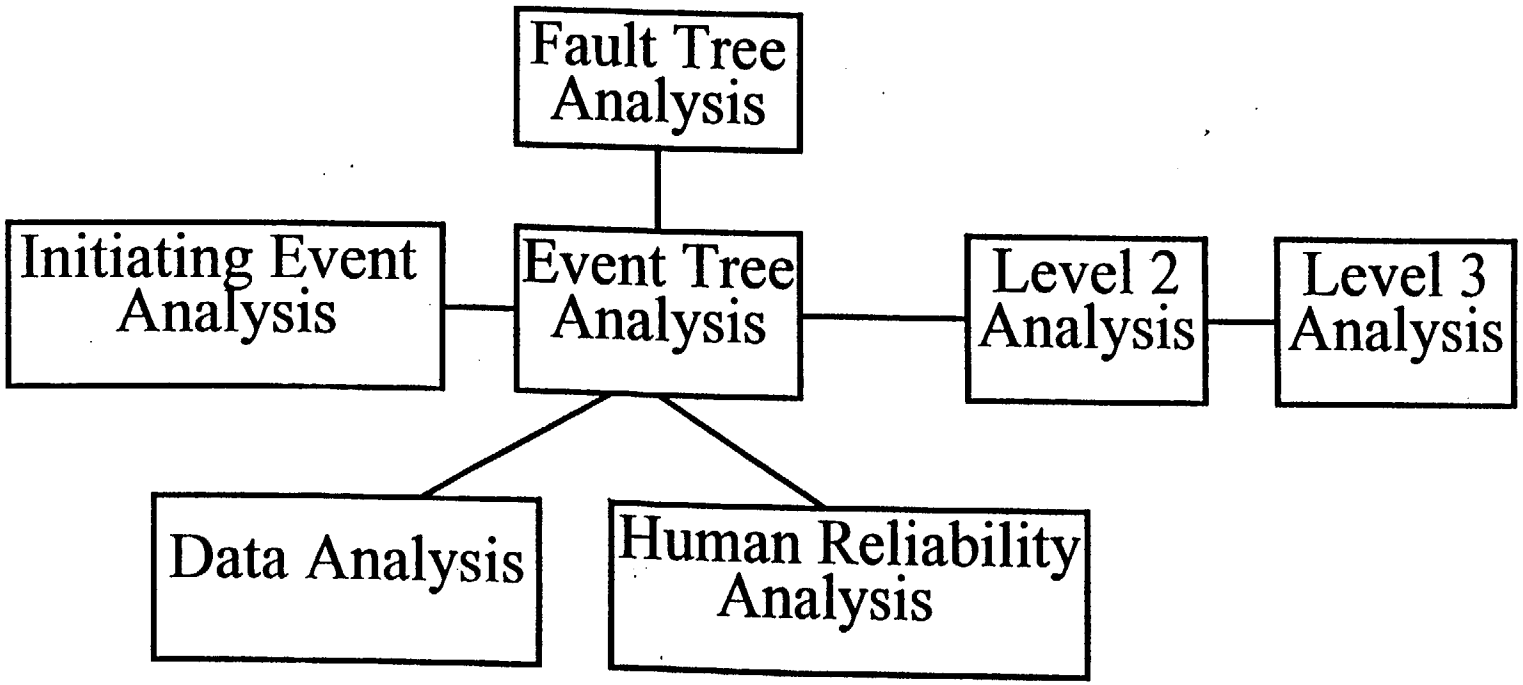
- First Major Application Was The Reactor Safety Study In 1975 (WASH-1400)
- NUREG-1150 Study Of Five Plants Using Updated Methodologies And Data
- Individual Plant Examinations (IPEs) Required By GL 88-20
- NRC Policy Statement On The Use Of PRA In Regulatory Applications

Overview Of PRA

- A PRA Involves Three Sequential Parts Or "Levels"
  - Level 1 - Identification And Quantification Of The Sequence Of Events Leading To Core Damage
  - Level 2 - Evaluation And Quantification Of The Mechanisms And Amounts Of Radioactive Material Released From Containment
  - Level 3 - Evaluation Of The Consequences To The Public

PRA Process

Level 1 Analysis



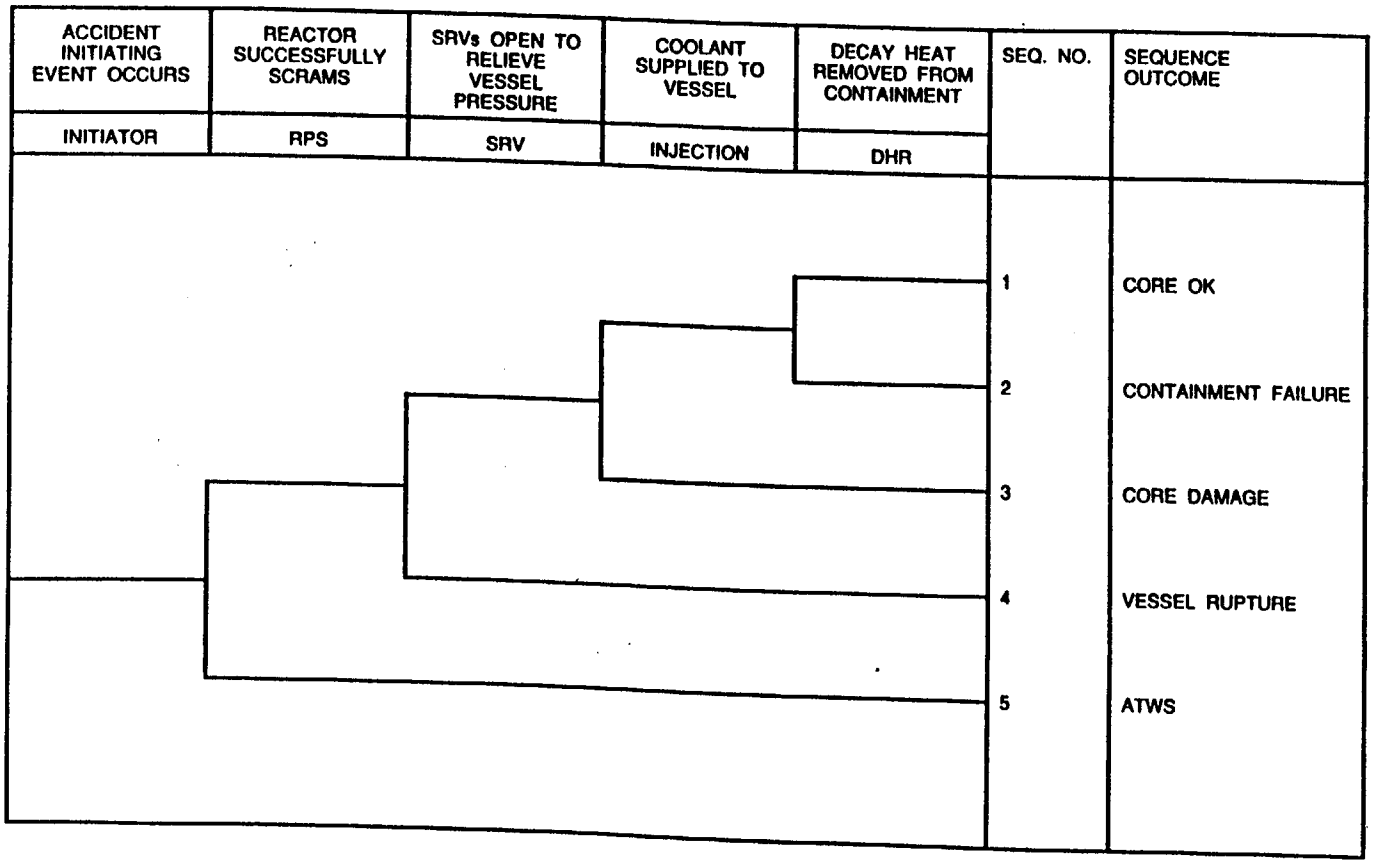
Initiating Events

- Initiating Event Identification
  - General Transients
  - Loss-Of-Coolant Accidents (LOCAs)
  - External Events (e.g., Seismic, Tornadoes, etc.)
- Initiating Events Grouped According To:
  - Similar Plant Response
  - Same Requirements For Mitigation

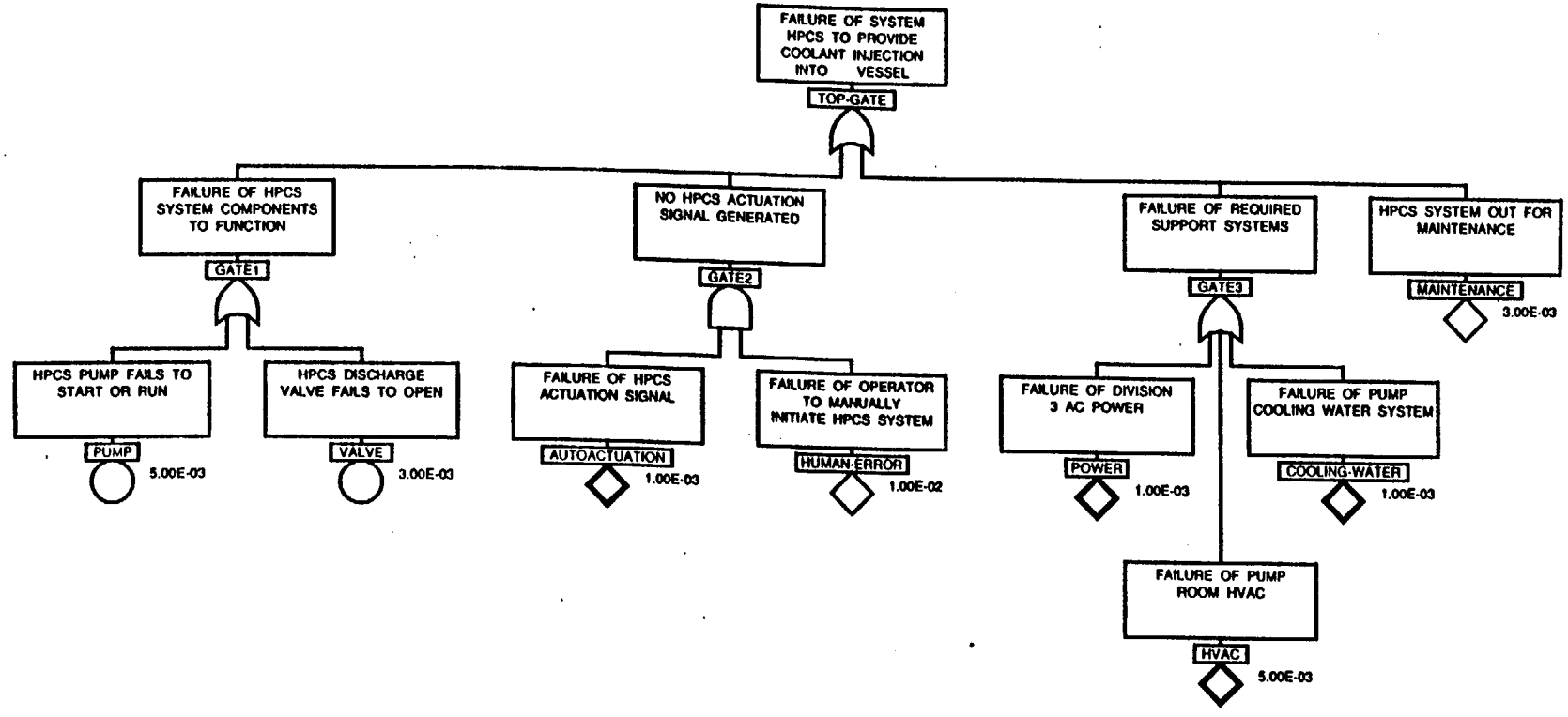
Accident Sequence Models

- Sequence OF Events Leading To Core Damage Depicted Using Event Trees
  - Binary Model Showing Success Or Failure Of Mitigating Systems And Operator Actions
- Mitigating System Failure Modes Determined Using Fault Trees
  - Component Failures
  - Human Errors
  - External Event Interactions

Example Event Tree



Example Fault Tree



Quantitative Assessment Methodology

- Utilized Qualitative Assessment To Identify Potential Accident Scenarios Of Concern
  - Seismic-Induced Anticipated Transient Without Scram (ATWS)
  - Large Break Recirculation Line LOCA
- Generic Event Trees Constructed For Various Vintages of BWRs
  - Typically BWR/2, BWR/3-/4s, & BWR/5-/6s

Quantitative Assessment Methodology (cont.)

- Generic Mitigating System Fault Trees Constructed
  - Survey of BWR IPEs Performed
  - Most Common And Conservative System Alignments Chosen For Modeling
  - Available BWR IPEs Reviewed To Identify Important Component Failure Modes To Include In Fault Trees

Quantitative Assessment Methodology (cont.)

- Modeling Of Seismic Events Required Special Considerations
  - Seismic Hazard Curve Yielding Highest Frequency Earthquakes Selected For Plant In Each Group (Discretized Into 15 Intervals)
  - Seismic-Induced Component Failures Added To Fault Trees
  - For SCC-Degraded Components, Fragilities Assumed To Be 1.0 For All Levels Of Earthquakes
  - Frequency Of Core Damage From Seismic-Induced Failures Quantified For Accelerations Up To 1.0 g

Quantitative Assessment Methodology (cont.)

- Generic Data Used To Quantify Models
  - Generic LOCA Frequencies
  - Seismic Hazard Curves
  - Random Component Failure Data And Common-Cause Failure Data (NUREG-1150)
  - Component Seismic Fragilities
  - Human Error Probabilities (NUREG-1150)

Modeling Of SCC-Degraded Component Failures

- Degraded Component Modeling Requires Knowledge Of:
  - How Many Components Must Fail To Result In Adverse Condition
  - Depth And Length Of Crack Penetration Required For Individual Component Failure
- Unavailability Of Information Resulted In Bounding Approach In Performing The Quantitative Assessment

Bounding Assessment Approach

- Quantification Of Models Performed First With Probability Of SCC-Degraded Components Failures Set To 1.0
- If The Frequencies From All Accident Sequences <1E-6/yr, No Further Analysis Required
- If >1E-6/yr, Crack Growth Model Used To Calculate Component Failure Probabilities & PRA Models Reevaluated
- Sensitivity Calculations Performed
- Results Indicate Which Components Are More Important To Safety Based On Prevention Of Core Damage

Crack Growth Model

- Monte Carlo Crack Growth Model Used To Determine Probability Of Component Failure Due To SCC
- Model Requires:
  - Probability Crack Exists In a Weld (Conservatively Assumed To Be 1.0)
  - Crack Growth Rate Data
  - Critical Crack Size Resulting In Component Failure
  - Time Period For Crack Growth

Crack Growth Rates

- Two Crack Growth Rates For Austentic Stainless Steel Used: Before And After 1985 Water Chemistry Changes
- Pre-1985 Rate Applied For Period Ranging From Time Earliest Plant In Each BWR Vintage Reached Criticality To 1985
- Post-1985 Rate Applied For 10 Year Period
- Rates Assumed To Be Constant Over These Periods

Crack Growth Rates (cont.)

- Empirically-Based Correlation Developed For BWRVIP Used To Determine Rates Assuming Following Conditions:
  - Stress Intensity Factor = 30 Ksi* $\sqrt{}$ inch
  - Water Conductivity = 0.15 μS/cm (post-1985)
  - = 0.5 μS/cm (pre-1985)
  - Electrochemical Potential = 200mV
  - Test Temperature = 561 K
- Sensitivity Studies Performed For Different Stress Intensity Factors

Crack Growth Rate Correlation

PROPRIETARY INFORMATION

Calculated Crack Growth Rate Lognormal Distributions

PROPRIETARY INFORMATION

Critical Crack Sizes

- Crack Growth Along The Length Of a Weld Assumed Required For Component Failure
- Cracks Assumed To Extend Through The Weld Thickness
- Critical Crack Size Information Did Not Exist For Components Of Interest
- Critical Crack Sizes Thus Assumed To Range Between 70-100% Of Weld Length

Monte Carlo Method

- Randomly Samples Crack Growth Rate Distributions (Both Pre- & Post-1985)
- Applied To Both Tips Of a Crack
- Resulting Crack Size Categorized And Compared To Critical Crack Size Required For Component Failure
- Process Repeated 1000 Times
- Number Of Samples Exceeding Critical Crack Size Divided By 1000 To Obtain Probability Of Exceeding Critical Crack Size
- Probability Used in PRA Models

Example Quantitative Assessment - Core Spray Piping

- Concern Is That SCC-Degraded Core Spray Piping Will Fail During Large Recirculation Line Break
  - PRA Model Descriptions
    - Break Size
    - Assumptions
    - Event Tree
  - Evaluation Results

Potential Core Spray Piping Failure Locations[1]

PROPRIETARY INFORMATION

BWR Line Dependency

- BWR/2s Do Not Have Jet Pumps And Rely On Core Spray (CS) For Core Cooling
- BWR/3s And Most BWR/4s Inject LPCI Into Recirculation Lines Which Ensures Long-Term Steam Cooling Of Upper Core (CS Not Required)
- BWR/5s & /6s (And Some BWR/4s) Require CS To Ensure Long-Term Core Cooling Even If LPCI Is Successful

Critical Recirculation Line Break Sizes

- For BWR/2s, Critical Break Size Is Based On Ability To Reflood The Core Given CS Flow Bypassed Into Annulus Area
  - ~0.5 ft^2 If Flow From One CS Train Available
  - ~1.0 ft^2 If Flow From Two CS Trains Available
- For BWR/5s, /6s, & Few /4s; Jet Pump Flow Area Limit Ability To Reflood Core With 3 LPCI Trains For Break Sizes >1.5 ft^2
- Frequency Of Breaks Of These Sizes Assigned Value Of 7.5E-6/yr Based On Survey Of Data

Event Tree Assumptions

- BWR/2 Event Tree Assumptions
  - Credits Alternate Coolant Injection Systems (Raw Water Or Firewater) Based On IPE Models
- BWR/4 & BWR/5-/6 Assumptions
  - No Credit For Alternate Coolant Injection Systems (Conservative For Some Plants)
  - Impact Of CS Pipe Break On Ability To Inject Boron During ATWS Not Developed Due To Low Frequency Of LOCA-ATWS Event
  - Failure Of LPCI Couplings From SCC Included In Evaluation

BWR/2 Large Recirculation Line LOCA Event Tree

PROPRIETARY INFORMATION

BWR/4 Large Recirculation Line LOCA Event Tree

PROPRIETARY INFORMATION

BWR/5 & /6 Large Recirculation Line LOCA Event Tree

PROPRIETARY INFORMATION

Core Spray Piping Results

PROPRIETARY INFORMATION

Core Spray Pipe Weld Failure Probability Estimates

PROPRIETARY INFORMATION

Control Rod Guide Tube, CRD Housing, & Stub Tubes

PROPRIETARY INFORMATION

Core Plate

PROPRIETARY INFORMATION

Core Plate Sparger

PROPRIETARY INFORMATION

Jet Pump Assembly

PROPRIETARY INFORMATION

LPCI Coupling

PROPRIETARY INFORMATION

Access Hole Cover

PROPRIETARY INFORMATION

Top Guide/Grid

PROPRIETARY INFORMATION

Study Utilized Conservative Assumptions

- PRA Model Assumptions:
  - Conservative System Alignments
  - Alternate Mitigating Systems Not Credited
  - LOCA During An ATWS Treated As Unmitigatable
  - Full Power ATWS Modeled
  - Most Limiting Seismic Hazard Curves Used
  - Seismic-Induced Failure Of Components Modeled
  - Seismic Failure Of SCC-Degraded Components Assumed To Occur With Probability Of 1.0

Study Utilized Conservative Assumptions (cont.)

- Crack Growth Model Assumptions:
  - Crack Growth Evaluated Using Bounding Conditions Expected To Encompass All Vessel Components
  - Crack Growth Rates Prior To 1985 Are 3.4 Times Higher Than Current Rates
  - Crack Growth Evaluated For Oldest Plant In Each Group And Applied Generically To All Plants In Group
  - Crack Growth Applied Along Length Of Weld And Assumed To Be Completely Through Weld Thickness
  - Cracks Allowed To Grow From Both Ends

Component Prioritization Based On Quantitative Assessment

- High Priority Components:
  - Top Guide In BWR/3s And Those Early BWR/4s Without Brackets And Wedges
  - Core Spray Piping And Spargers In All BWRs
- Medium Priority Components:
  - Core Plate Components In BWR/2s Through BWR/5s
  - CRDs For All BWRs
- Low Priority Components
  - Jet Pump Assemblies
  - LPCI Couplings
  - Access Hole Covers

Conclusions

- Results Indicate That Failure Of Any Of The 8 Reactor Internal Components Analyzed Due To SCC Will Not Result In Significant Safety Concerns
- Results Also Confirm The Conclusion Of Qualitative Safety Assessment That No Short-Term Actions Are Required
- Core Damage Frequencies Calculated In This Study Are Conservative Due To Use Of Conservative Models, Assumptions, And Estimates Of SCC-Induced Failure Probabilities
- Although Performed At a Generic Level, The Results Are Applicable For All BWR/2s Through BWR/6s

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BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

MEMORANDUM

May 22, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: "BWR Vessel and Internals Project Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)," May, 1997

Enclosed are ten (10) copies of the document "BWRVIP Vessel and Internals Project, Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)," May, 1997. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of core spray piping.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

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EPRI
Electric Power
Research Institute

Powering Progress through Innovative Solutions

May 21, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-2738

Subject: TR-108198 report, "BWR Vessel and Internals Project Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)," May, 1997

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415) 855-2000 • www.epri.com
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 293-2697

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (415) 855-2845. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (415) 855-2340.

Sincerely,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

RE: TR-108198 report, "BWR Vessel and Internals Project Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)," May, 1997.

I. ARTHUR KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

May 21, 1997

Arthur Kenny, Esq.

Subscribed and sworn before me this day: May 21, 1997

Tamsen Helen Gagnon, Notary Public

Structural Integrity Associates, Inc.

3315 Almaden Expressway
Suite 24
San Jose, CA 95118-1557

Phone: 408-978-8200
Fax: 408-978-8964
priccard@structint.com

May 16, 1997
PCR-97-023

Mr. Gene Carpenter
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Subject: Transmittal of BWRVIP VIPER Computer Code

Dear Gene:

Per request from Robin Dyle, I am enclosing a copy of the VIPER (Vessel Inspection Program Evaluation for Reliability) computer code which was developed for analysis of reactor vessel probabilistic fracture mechanics analyses performed in support of the BWRVIP Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05). A diskette containing an executable version of the program, plus a theoretical/users manual is enclosed. Two input files are also contained on the diskette, one for a longitudinal weld and the other for a circumferential weld. To run the program, simply copy the executable file over to your system and run it. You can modify the input files as appropriate. Detailed instructions for setting up input files and running the program are contained in Section 4 of the manual. If you have any questions or problems, contact Stan Tang at our office.

I have also enclosed printouts from two pivotal runs in our study - a longitudinal weld with 90% inspection (failure probability=5.68×10^{-8}) and a circumferential weld with 0% inspection (failure probability=2.116×10^{-41}).

Please call Robin Dyle or me if you have any questions, or if we can be of any further assistance in your review of the BWRVIP inspection recommendations.

Very truly yours,

P. C. Riccardella,
President

sl
Enclosure
cc: Robin Dyle

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97-368

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

MEMORANDUM

April 25, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: "BWR Vessel and Internals Project: BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)", April, 1997

Enclosed are ten (10) copies of the document "BWRVIP Vessel and Internals Project, BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)", TR-107286, April, 1997. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory efforts related to the inspection requirements for Standby Liquird Control (SLC) penetration welds.

The enclosed report is being submitted on behalf of the BWRVIP utilities, however, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information . A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

230196 RD-10-1 6002 F/40 1/10 PD F/40 1/10 NP

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

39

EPRI
Electric Power
Research Institute

Powering Progress through Innovative Solutions

April 28, 1997

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: Request for Withholding of Proprietary Document; 10CFR2.790(a)(4)
TR-107286, "BWR Vessel and Internals Project, BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)", April, 1997

Dear Gentlemen:

This is a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the information identified in the enclosed affidavit consisting of EPRI owned Proprietary Information contained within EPRI report TR-107286 entitled "BWR Vessel and Internals Project, BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)" dated April, 1997. The report is referred to below as the "Information." The Information is marked PROPRIETARY and CONFIDENTIAL.

EPRI desires to disclose the Information in confidence to the NRC for informational purposes to assist the NRC. EPRI would welcome any discussions between EPRI and the NRC related to the Information that the NRC desires to conduct.

Enclosed is an affidavit to support EPRI's request for withholding. If you have any questions relating to the propriety of this request or the enclosed affidavit, please do not hesitiate to contact me at (415) 855-2845. The fax machine closest to me is at (415) 855-8931. Questions on the technical aspects of the Information may be addressed to Warren Bilanin at (415) 855-2340.

Yours truly,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

cc: M. Campbell

RE: TR-107286, "BWR Vessel and Internals Project, BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)", April, 1997

AFFIDAVIT

I, ARTHUR KENNY, being duly sworn, depose and state as follows:

I am a Intellectual Property Attorney of the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the records, documents and information sought under this affidavit to be withheld (the "Information") and authorized to apply for their withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790 (a)(4) based on the fact that the Information consists of trade secrets of EPRI owned by EPRI and that the NRC will receive the Information from EPRI under privilege and in confidence.

The Information, which EPRI requests the NRC to withhold, consists of EPRI owned Proprietary Information contained within an EPRI report TR-107286 entitled "BWR Vessel and Internals Project, BWRVIP Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)", April, 1997". The Information has been marked as PROPRIETARY AND CONFIDENTIAL.

EPRI desires to disclose the Information to the NRC for informational purposes to assist the NRC. EPRI would welcome any discussions between EPRI and the NRC related to the Information that the NRC desires to conduct.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Information has been held in confidence by EPRI. EPRI intends to provide copies of the Information to EPRI members and to one or more EPRI contractors. EPRI members and contractors are bound by confidentiality agreements to preserve the confidentiality of proprietary and confidential documents received from EPRI. Receipt of the Information by such members and contractors will not impair the proprietary and confidential nature of the Information nor will such receipt impair the value of the Information as trade secrets. In addition, EPRI may license the Information to organizations that are not EPRI members.

(ii) The Information is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Information is of a type that EPRI considers to be trade secrets. Such Information is customarily held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Information at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the electric power industry were able to obtain the Information, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to obtain the Information. The rational basis that EPRI has for classifying information as a trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Information will be transmitted and received by the NRC in confidence. The purpose is to maintain the confidentiality of the Information.

(iv) The Information is not available in public sources. EPRI developed the Information only after making a determination that the Information was not available from public sources. EPRI was required to spend a large amount of money through payments to contractors. In addition, EPRI was required to use a large amount of time of EPRI employees. Finally, the Information was developed only after a long period of effort.

(v) A public disclosure of the Information would be highly likely to cause substantial harm to EPRI's competitive position. The Information can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief.

I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

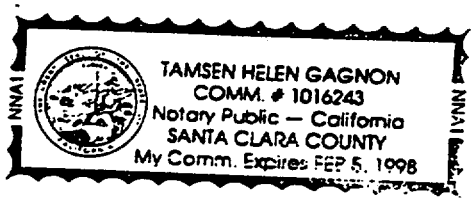
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

April 28, 1997

Arthur Kenny

Subscribed and sworn before me this day: April 28, 1997

Tamsen Helen Gagnon, NOTARY PUBLIC



EPRI TR-107286
April 1997

EPRI
Electric Power
Research Institute

BWR Vessel and Internals Project

BWR Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)

Prepared by
BWR Vessel and Internals Project Assessment Committee
Standby Liquid Control Inspection and Evaluation Focus Group

GE Nuclear Energy

NON-PROPRIETARY INFORMATION

NOTICE: This report contains the non-proprietary information that is included in the proprietary version of this report. The proprietary version of this report contains proprietary information that is the intellectual property of BWRVIP utility members and EPRI. Accordingly, the proprietary report is available only under license from EPRI and may not be reproduced or disclosed, wholly or in part, by any Licensee to any other person or organization.

REPORT SUMMARY

BWRVIP Vessel and Internals Project

BWR Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)

The Boiling Water Reactor Vessel and Internals Project (BWRVIP), formed in June, 1994, is an association of utilities focused exclusively on BWR vessel and internals issues. This BWRVIP report defines inspection requirements for BWR Standby Liquid Control (SLC) system piping from the vessel nozzle safe-end inward.

INTEREST CATEGORIES

Piping, reactor, vessel & internals
Licensing and safety assessment

KEYWORDS

Boiling water reactor
Inspection strategy
Standby liquid control
Stress corrosion cracking
Vessel and internals

BACKGROUND Cracking due to intergranular stress corrosion cracking (IGSCC) has been observed in a number of internal components in domestic and overseas BWRs. Utilities require a standardized methodology which is accepted by regulators for performing inspections and for evaluating the consequences of any observed cracking.

OBJECTIVE To develop a generic inspection strategy for BWR SLC piping.

APPROACH A group of utility and industry experts evaluated available data, including IGSCC experience, to develop generic Guidelines. This information was used to identify the weld locations on the SLC piping (from the vessel safe-end inward) which could be susceptible to cracking. The consequences of cracking at each of the locations was assessed and, based on those results, generic inspection recommendations were developed.

RESULTS The report concludes that the integrity of the piping internal to the vessel is not critical to safety. However, it is critical that the vessel nozzle integrity be maintained such that sodium pentaborate can always be injected into the vessel with only minor loss due to leakage. Consequently, inspection requirements concentrate on inspection of the nozzle and safe-end welds. It is recommended that for most configurations, the current ASME inspection requirements be followed. For some configurations, however, an additional ultrasonic (UT) examination is recommended.

EPRI PERSPECTIVE It is the intent that, for BWRVIP members, these Guidelines will be followed in place of prior GE Services Information Letters (SILs). It is further intended that these Guidelines will be submitted to the US NRC and, possibly, non-US regulators for their approval. Regulatory acceptance of these Guidelines will significantly reduce the utility effort required to obtain approval for plant-specific programs.

PROJECT
B310
EPRI Project Manager: Robert G. Carter
Nuclear Power Group
Contractor: General Electric

For ordering information about this report, call the EPRI Program Manager at (415) 855-2340.

For membership information, call (415) 855-2514.

BWR Vessel and Internals Project

BWR Standby Liquid Control System/Core Plate ΔP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)

TR-107286
Research Project B301

Final Report, April, 1997

Prepared by:

BOILING WATER REACTOR VESSEL AND INTERNALS PROJECT
ASSESSMENT COMMITTEE STANDBY LIQUID CONTROL
INSPECTION AND EVALUATION FOCUS GROUP

GE NUCLEAR ENERGY

Principal Investigator

Tom Caine
K. R. Kotak

Prepared for

BOILING WATER REACTOR VESSEL & INTERNALS PROJECT and
ELECTRIC POWER RESEARCH INSTITUTE
3412 Hillview Ave.
Palo Alto, California 94304

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITIES

This report was prepared by the organization(s) named below as an account of work sponsored or cosponsored by the BWR Vessel and Internals Project (BWRVIP) and the Electric Power Research Institute, Inc. (EPRI). Neither BWRVIP, EPRI, any member of EPRI, any cosponsor, the organization(s) named below, nor any person acting on behalf of any of them:

(a) makes any warranty or representation whatsoever, express or implied, (i) with respect to the use of any information, apparatus, method, process or similar item disclosed in this report, including merchantability and fitness for a particular purpose, or (ii) that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or (iii) that this report is suitable to any particular user's circumstance, or

(b) assumes any responsibility for any damages or other liability whatsoever (including any consequential damages, even if BWRVIP, EPRI or any EPRI representative has been advised of the possibility of such damages) resulting from your selection or use of this report or any information, apparatus, method, process or similar item disclosed in this report.

Organization(s) that prepared this report:

BWR VESSEL AND INTERNALS PROJECT ASSESSMENT COMMITTEE STANDBY LIQUID CONTROL INSPECTION AND EVALUATION FOCUS GROUP

GE NUCLEAR ENERGY

ORDERING INFORMATION

Requests for copies of this report should be directed to the BWRVIP Program Manager, 3412 Hillview Ave., Palo Alto, Ca. 94304, (415) 855-2340.

Table of Contents

Executive Summary

In the BWRVIP-06 safety assessment, there are several components where extensive degradation can be tolerated because of the redundancy provided by the Standby Liquid Control (SLC) System. Therefore, the successful function of the SLC system is important to achieve reactor shutdown. A number of failures are readily detectable, but even without detection of cracking the SLC system would function adequately when initiated as long as the boron is injected into the bottom head. Therefore, the focus of the evaluations in these guidelines is on the region where the ΔP/SLC housing or nozzle penetrates the vessel bottom head.

The objective of these guidelines is to show that boron can be successfully injected into the bottom head under the worst credible cracking conditions because the line to the vessel will not fail in a way that the external pipe is ejected from the vessel. Each of the nine penetration design types in BWR/2-6 is presented and a basis is provided to support the conclusion that the ΔP/SLC housing or nozzle will not be ejected as a result of potential cracking of the penetration weld. Further, such cracking would result in pressure boundary leakage, which would be detected and allow for an orderly shutdown.

Based on the conclusion that a ΔP/SLC housing or nozzle cannot be ejected, and the detectability of significant cracking of the penetration weld, the guidelines recommend that the inspection requirements currently in ASME Section XI continue to be followed for penetration welds.

For the plants where a stainless steel safe end is welded to the ΔP/SLC low alloy steel nozzle, and the plants where a stainless steel safe end extension is welded to the Alloy 600 ΔP/SLC housing, UT is recommended for SCC-susceptible regions.

April 24, 1997

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF BWR VESSEL AND INTERNALS PROJECT REPORTS, "BWR VESSEL AND INTERNALS PROJECT, ASSESSMENT OF BWR JET PUMP RISER ELBOW TO THERMAL SLEEVE WELD CRACKING" (BWRVIP-28) (TAC NO. M97395)

Dear Mr. Terry:

By your application dated December 23, 1996, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Assessment of BWR Jet Pump Riser Elbow to Thermal Sleeve Weld Cracking (BWRVIP-28)," EPRI Report TR-107667, December 1996. The BWRVIP-28 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to assessing the implications of potential cracking of BWR jet pump riser elbow to thermal sleeve welds.

The NRC staff has completed its preliminary review of the BWRVIP-28 reports. As indicated in the attached request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that the BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

/S/

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc:
Central File KAKavanagh FGrubelich MEMayfield
NRR/EMCB Reading LEPhillips KAManoly

DOCUMENT NAME: G:\BWRVIP\BWRVIP28.RAI * See Previous Concurrence
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

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4/8/97		4/24/97		4/8/97		4/24/97		4/24/97	

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cc:

Warren Bilanin, EPRI BWRVIP Manager
Electric Power Research Institute
3412 Hillview Ave.
Palo Alto, CA 94304

Robert Keaten, Executive Chairman
BWRVIP Inspection Task
GPU Nuclear
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George Jones, Executive Chairman
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Birmingham, AL 35201

Robin Dyle, Technical Chairman
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Birmingham, AL 35201

97-292

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

MEMORANDUM

March 18, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: "BWRVIP Vessel and Internals Project, Internal Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16)" EPRI Report TR-106708, March 1997.

Enclosed are ten (10) copies of the document "BWRVIP Vessel and Internals Project, Internal Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16)" EPRI Report TR-106708, March 1997. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory efforts related to the general design acceptance criteria for full and/or partial replacement of internal core spray piping, spargers and supports.

The enclosed report is being submitted on behalf of the BWRVIP utilities, however, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information . A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.
Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

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EPRI
Electric Power
Research Institute

Leadership in Science and Technology

March 21, 1997

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Subject: Request for Withholding of Proprietary Document; 10CFR2.790(a)(4) TR-106708, "BWRVIP Vessel and Internals Project: Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16) EPRI Report, March, 1997

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (415) 855-2845. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (415) 855-2340.

Sincerely,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

9703260

RE: TR-106708, "BWRVIP Vessel and Internals Project: Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16) EPRI Report, March, 1997

I. ARTHUR KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

March 21, 1997

Arthur Kenny

Subscribed and sworn before me this day:

Sumi Yamashita

MGC1 Sumi Yamashita Comm #1093096 NOTARY PUBLIC CALIFORNIA SANTA CLARA COUNTY Comm. Exp. March 31 2000 MGC1

March 14, 1997

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF BWR VESSEL AND INTERNALS PROJECT REPORTS, "CORE PLATE INSPECTION AND FLAW EVALUATION GUIDELINE," AND "TOP GUIDE INSPECTION AND FLAW EVALUATION GUIDELINE" (TAC NOS. M97802 AND M97803)

Dear Mr. Terry:

By your applications dated December 27, 1996, you submitted for NRC staff review two Electric Power Research Institute (EPRI) proprietary reports, "BWR Vessel and Internals Project, Core Plate Inspection and Flaw Evaluation Guideline (BWRVIP-25)," EPRI Report TR-107284, dated December 1996, and "BWR Vessel and Internals Project, Top Guide Inspection and Flaw Evaluation Guideline (BWRVIP-26)," EPRI Report TR-107285, dated December 1996. The BWRVIP-25 and BWRVIP-26 reports were submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory improvements related to inspection and flaw evaluation of intergranular stress corrosion cracking (IGSCC) in BWR core plates and top guides, respectively.

The NRC staff has completed its preliminary review of the BWRVIP-25 and BWRVIP-26 reports. As indicated in the attached requests for additional information (RAI), the NRC staff has determined that additional information is needed to complete the respective reviews. We request that the BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its reviews in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

(Original /s/ by C. E. Carpenter, Jr.)

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosures: 1. BWRVIP-25 RAI
2. BWRVIP-26 RAI

cc:
Central File KAKavanagh FGrubelich MEMayfield
NRR/EMCB Reading LEPhillips KAManoly

DOCUMENT NAME: G:\BWRVIP\BWRVIP25.RAI * See Previous Concurrence
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FOIA- 2000-0186

F/43

DF*2 Add: Timir MISR - Paper Copy
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cc:

John Hosmer, Executive Chairman
BWRVIP Integration Task
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1400 Opus Place
Downers Grove, IL 60515

Robert Keaten, Executive Chairman
BWRVIP Inspection Task
GPU Nuclear
One Upper Pond Road, Bldg F
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40 Inverness Center Parkway
Birmingham, AL 35201

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF BWR VESSEL AND INTERNALS PROJECT REPORTS, "BWR VESSEL AND INTERNALS PROJECT, REACTOR PRESSURE VESSEL AND INTERNALS EXAMINATION GUIDELINES" (BWRVIP-03) (TAC NOS. M91898 AND M95369)

Dear Mr. Terry:

By your applications dated November 10, 1995, and April 16, 1996, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary reports, "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03)," EPRI Report TR-105696, October 1995, and BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), Section 6A, Standards for Visual Inspection of Core Spray Piping, Spargers, and Associated Components," EPRI Report TR-105696, February 1996, respectively. The BWRVIP-03 reports were submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory improvements related to BWR reactor pressure vessel and internals examinations.

The NRC staff has completed its preliminary review of the BWRVIP-03 reports. As indicated in the attached request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that the BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,
ORIGINAL SIGNED BY:
C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc:
Central File KAKavanagh FGrubelich MEMayfield
NRR/EMCB Reading LEPhillips KAManoly

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43

cc:

John Hosmer, Executive Chairman
BWRVIP Integration Task
Commonwealth Edison
1400 Opus Place
Downers Grove, IL 60515

Robert Keaten, Executive Chairman
BWRVIP Inspection Task
GPU Nuclear
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Parsippany, NJ 07054

George Jones, Executive Chairman
BWRVIP Mitigation Task
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Bill Campbell, Executive Chairman
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97-214

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

February 24, 1997

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

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-19

Reference: 1.) Letter from C.E. Carpenter, Jr. (NRC) to Carl Terry (BWRVIP Vice Chairman): "Proprietary Request for Additional Information - Review of BWR Vessel and Internals Project Reports, "BWR Core Spray Inspection and Flaw Evaluation Guidelines (BWRVIP-18)" and "Core Spray Piping and Sparger Repair Design Criteria (BWRVIP-19)" (TAC Nos. M96219 and M96539)"

2.) Letter from J.T. Beckham, Jr. (BWRVIP Chairman) to NRC Document Control Desk, "BWR Vessel and Internals Project, Internal Core Spray Piping and Sparger Repair Design Criteria" (BWRVIP-19)," EPRI Report TR-106893, September, 1996 dated September 16, 1996

Enclosed are ten (10) copies of the BWRVIP response to the Requests for Additional Information on BWRVIP-19 as identified in Reference 1.

The enclosed material contains proprietary information relating to a proprietary BWRVIP report previously transmitted to the NRC. Therefore, the request for withholding of the BWRVIP report from public disclosure transmitted to the NRC by Reference 2 above also applies to the enclosed information.

If you have any questions regarding this submittal, please contact me at 205/992-7446.

Sincerely,

for

Bruce McLeod
BWRVIP Repair Committee Chairman

F/45

January 22, 1997

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF BWR VESSEL AND INTERNALS PROJECT REPORTS, "BWR CORE SPRAY INTERNALS INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-18)," AND "CORE SPRAY PIPING AND SPARGER REPAIR DESIGN CRITERIA (BWRVIP-19)" (TAC NOS. M96219 AND M96539)

Dear Mr. Terry:

By your applications dated July 26, and September 16, 1996, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary reports, "BWR Vessel and Internals Project, BWR Core Spray Internals Inspection and Flaw Evaluation Guidelines (BWRVIP-18)," EPRI Report TR-106740, and "Internal Core Spray Piping and Sparger Repair Design Criteria (BWRVIP-19)," EPRI Report TR-106893, respectively. The BWRVIP-18 and BWRVIP-19 reports were submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory improvements related to inspection and flaw evaluation of intergranular stress corrosion cracking in BWR core spray internals, and to the repair of the subject reactor components, respectively.

The NRC staff has completed its preliminary review of the BWRVIP-18 and BWRVIP-19 reports. As indicated in the attached request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that the BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,
ORIGINAL SIGNED BY:

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc:
Central File KAKavanagh FGrubelich MEMayfield
NRR/EMCB Reading LEPhillips KAManoly WHKoo

DOCUMENT NAME: G:\BWRVIP\BWRVIP18.RAI * See Previous Concurrence
To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

EMCB:LPM	E	EMCB:SC	E	EMCB/(A)BC	E		E
CECarpenter		DTerao		KWichman			
1/14/97		1/15/97		1/16/97		1/ /97	

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98-540

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

December 31, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – "BWR Vessel and Internals Project, Technical Basis for Inspection Relief for BWR Internal Components with Hydrogen Injection (BWRVIP-62)," EPRI Report TR-108705, December 1998.

Enclosed are ten (10) copies of the report "BWR Vessel and Internals Project, Technical Basis for Inspection Relief for BWR Internal Components with Hydrogen Injection (BWRVIP-62)," EPRI Report TR-108705, December 1998. This report is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the technical basis for inspection relief for BWR internal components with hydrogen injection.

Please note that the enclosed proprietary report contains proprietary information. A letter requesting the report be withheld from public disclosure and an affidavit describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call John Wilson of Illinois Power, BWRVIP Mitigation Committee Technical Chairman, at (217) 935-8881 x4354.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F147

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

December 21, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108705, "BWRVIP Vessel and Internals Project, Technical Basis for Inspection Relief for BWR Internal Components with Hydrogen Injection (BWRVIP-62)," December 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the technical basis for inspection relief for BWR Internal components with hydrogen injection. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-2845 Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Art Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures (1)

RE: TR-108705, "BWRVIP Vessel and Internals Project, Technical Basis for Inspection Relief for BWR Internal Components with Hydrogen Injection (BWRVIP-62)," December 1998

I, ART KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (i) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (ii) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

December 21, 1998

Art Kenny

Subscribed and sworn before me this day: December 21, 1998

Tamsen Helen Gagnon, Notary Public

98-539

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

December 23, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – "BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Nickel Base Austenitic Alloys in RPV Internals (BWRVIP-59)," EPRI Report TR-108710, December 1998.

Enclosed are ten (10) copies of the report "BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Nickel-Base RPV Internals (BWRVIP-59)," EPRI Report TR-108710, December 1998. This report is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the evaluation of crack growth in BWR nickel base reactor pressure vessel (RPV) internals.

The enclosed report presents a crack growth evaluation methodology for BWR nickel base RPV internals based on current knowledge. The BWRVIP is continuing work in the area of crack growth evaluations for BWR nickel base RPV internals. This ongoing work is expected to result in an additional statistical correlation for evaluating crack growth in BWR nickel base RPV internals. This additional approach is scheduled to be submitted to the NRC in 1999. This methodology of several alternative approaches for evaluating crack growth in BWR nickel base RPV internals is similar to the methodology for BWR stainless steel RPV internals documented in the BWRVIP-14 report.

Please note that the enclosed proprietary report contains proprietary information. A letter requesting the report be withheld from public disclosure and an affidavit describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Steve Lewis of Entergy, BWRVIP Assessment Committee Technical Chairman, at (601) 437-6194.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

9812290036 / PDR

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F148

47

Attachment 1

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

December 17, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108710, "BWRVIP Vessel and Internals Project: Evaluation of Crack Growth in BWR Nickel Base Austenitic Alloys in RPV Internals (BWRVIP-59)," December, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to evaluation of crack growth in nickel base austenitic alloys in BWR reactor pressure vessel internal components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Art Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures (2)

RE: TR-108710, "BWRVIP Vessel and Internals Project: Evaluation of Crack Growth in BWR Nickel Base Austenitic Alloys in RPV Internals (BWRVIP-59)," December, 1998

I, ART KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (i) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (ii) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.
>
> (iii) The Report will be transmitted to the NRC in confidence.
>
> (iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a

large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

December 17, 1998

Art Kenny

Subscribed and sworn before me this day: December 17, 1998

Tamsen Helen Gagnon, Notary Public

TAMSEN HELEN GAGNON
Commission # 1172409
Notary Public - California
Santa Clara County
My Comm. Expires Feb 5, 2002

98-531

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

December 22, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: CRD Internal Access Weld Repair (BWRVIP-58)," EPRI Report TR-108703, December, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: CRD Internal Access Weld Repair (BWRVIP-58)" EPRI Report TR-108703, December, 1998. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F149

18

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

November 13, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108703 "BWRVIP Vessel and Internals Project: CRD Internal Access Weld Repair (BWRVIP-58)", December, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor component. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Art Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

CORPORATE HEADQUARTERS
3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

RE: TR-108703 "BWRVIP Vessel and Internals Project: CRD Internal Access Weld Repair (BWRVIP-58)", December, 1998

I. ART KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees, which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (i) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (ii) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

November 13, 1998

Art Kenny

Subscribed and sworn before me this day: November 13, 1998

Tamsen Helen Gagnon, Notary Public

NOV-13,1998

TAMSEN HELEN GAGNON
Commission # 1172409
Notary Public - California
Santa Clara County
My Comm. Expires Feb 5, 2002

98-523

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

December 16, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project Instrument Penetration Repair Design Criteria (BWRVIP-57)," EPRI Report TR-108721, December, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Instrument Penetration Repair Design Criteria (BWRVIP-57)" EPRI Report TR-108721, December, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F150

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

November 9, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108721 "BWRVIP Vessel and Internals Project: Instrument Penetration Repair Design Criteria (BWRVIP-57)", December, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor component. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Art Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

CORPORATE HEADQUARTERS
3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

RE: TR-108721 "BWRVIP Vessel and Internals Project: Instrument Penetration Repair Design Criteria (BWRVIP-57)", December, 1998

I. ART KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees, which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

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> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

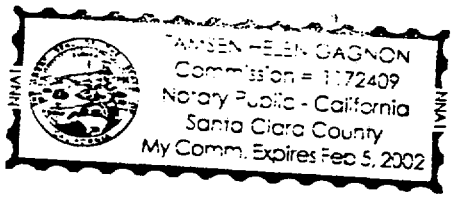
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

November 9, 1998

Art Kenny

Subscribed and sworn before me this day: November 9, 1998

Tamsen Helen Gagnon, Notary Public



98-520

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

MEMORANDUM

December 15, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – Response to NRC Request for Additional Information on BWRVIP-05 Dated June 8, 1998

Reference: Letter from Gus C. Lainas (NRC) to Carl Terry (BWRVIP Chairman), "Request for Additional Information on Boiling Water Reactor Axial Welds Related to Staff's Review of BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)," dated June 8, 1998.

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) transmitted by the NRC letter referenced above. This RAI relates to axial welds as discussed in the BWRVIP report "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)."

The enclosed response repeats each of the individual items in the RAI verbatim, followed by the BWRVIP response to that item. The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 437-6194.

Sincerely,

Warren Bilanin

for Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power & Light Company

c: Steve Lewis, Entergy

1/10

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98-458

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

November 24, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington DC 20555-0001

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 -- BWRVIP Response to NRC Safety Evaluation of BWRVIP-14

Reference: Letter from Gus C. Lainas (NRC) to Carl Terry (BWRVIP Chairman), "Safety Evaluation of the BWR Vessel and Internals Project BWRVIP-14 Report," dated June 8, 1998.

Enclosed are 10 copies of the BWRVIP response to the issues identified in the NRC Safety Evaluation (SE) of the BWRVIP report "BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Stainless Steel Internals (BWRVIP-14)" transmitted by the NRC letter referenced above.

The enclosed response summarizes the issues identified in the NRC SE of BWRVIP-14 and provides a response to each of the issues.

The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 437-6194.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

c: Steve Lewis, Entergy

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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98-462

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

November 24, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington DC 20555-0001

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 -- BWRVIP Response to NRC Request for Additional Information on BWRVIP-38

Reference: Letter from C. E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), "Proprietary Request for Additional Information – Review of BWR Vessel and Internals Project, Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38)," dated April 8, 1998.

Enclosed are 10 copies of the BWRVIP response to the Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38)" transmitted by the NRC letter referenced above.

During a September 22, 1998 telephone conference, BWRVIP representatives provided additional information to the NRC staff on the subject of this RAI. As a result of providing this additional information, the NRC staff indicated that responses to some of the items in the RAI need not be provided. Specifically, responses to items 1 through 5, 7, 8, 14 and 17 in the RAI referenced above do not need to be provided. Therefore, responses to these items are not included in the enclosed response to the RAI. Additionally, the response to item 15 in the RAI is still in the process of being developed and is not included in the enclosure. The response to item 15 will be provided separately in the near future.

The enclosed response repeats each of the individual items in the NRC RAI verbatim, followed by the BWRVIP response to that item.

As indicated in the NRC letter referenced above, the enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

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If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 437-6194.

Sincerely,

Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee

c: Steve Lewis, Entergy

98-449

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

November 16, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project LPCI Coupling Repair Design Criteria (BWRVIP-56)," EPRI Report TR-108717, November, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: LPCI Coupling Repair Design Criteria (BWRVIP-56)" EPRI Report TR-108717, November, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

F/54

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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EPRI

BWR Vessel and Internals Project

LPCI Coupling Repair Design Criteria (BWRVIP-56)

NON-PROPRIETARY INFORMATION

BWR Vessel and Internals Project

LPCI Coupling Repair Design Criteria (BWRVIP-56)

The Boiling Water Reactor Vessel and Internals Project (BWRVIP), formed in June, 1994, is an association of utilities focused exclusively on BWR vessel and internals issues. This BWRVIP report documents criteria which can be used to design a repair for LPCI Couplings in a BWR.

BACKGROUND In the event that significant degradation is observed in a BWR LPCI Coupling, repair may be required. Utilities need criteria which can be used in the development of designs for those repairs.

OBJECTIVE To compile the appropriate repair design criteria into a document which can be used by utility personnel performing the design and which could be submitted to appropriate regulatory agencies for approval of the generic design process.

APPROACH The contractor assembled a draft document which discussed all elements which need to be considered in designing a repair. Items discussed include: design objectives; structural evaluation; system evaluation; materials, fabrication and installation consideration; and, required inspection and testing. The resulting draft was reviewed in depth by BWRVIP utility representatives as well as third party contractors. The final report incorporates comments received during those reviews.

RESULTS The document provides general design acceptance criteria for the repair of a LPCI Coupling. Repairs designed to meet these criteria will maintain the structural integrity of the component under normal operation as well as under postulated transient and design basis accident conditions.

EPRI PERSPECTIVE The criteria listed in the report define a standard set of considerations which are important in designing a repair. It is intended that these criteria will be submitted to the USNRC, and possibily non-US regulators, for their approval. Regulatory acceptance of these generic criteria will significantly reduce the utility effort required to obtain approval for plant-specific repairs.

PROJECT
WOB501
EPRI Project Manager: Warren Bilanin
Nuclear Power Group
Contractor: General Electric Nuclear Energy

For ordering information about this report, call the EPRI Program Manager at (415) 855-2340.

For membership information, call (415) 855-2514

TR-108717

Interest Categories
Piping, reactor, vessel and internals
Licensing and safety assessment

Key Words
Boiling Water Reactor
Repair
Stress Corrosion Cracking
Vessel and Internals
LPCI Coupling

BWR Vessel and Internals Project

LPCI Coupling Repair Design Criteria (BWRVIP-56)

TR-108717
Research Project B501
Final Report, November, 1998

Prepared by:

GE Nuclear Energy

BWRVIP Repair Committee

Prepared for
BOILING WATER REACTOR VESSEL & INTERNALS PROJECT and **EPRI**
3412 Hillview Ave.
Palo Alto, California 94304

DISCLAIMER OF WARRANTIES AND LIMITATION OF LIABILITIES

This report was prepared by the organization(s) named below as an account of work sponsored or cosponsored by the BWR Vessel and Internals Project (BWRVIP) and the Electric Power Research Institute, Inc. (EPRI). Neither BWRVIP, EPRI, any member of EPRI, any cosponsor, the organization(s) named below, nor any person acting on behalf of any of them:

(a) makes any warranty or representation whatsoever, express or implied, (i) with respect to the use of any information, apparatus, method, process or similar item disclosed in this report, including mechantability and fitness for a particular purpose, or (ii) that such use does not infringe on or interfere with privately owned rights, including any party's intellectual property, or (iii) that this report is suitable to any particular user's circumstance, or

(b) assumes any responsibility for any damages or other liability whatsoever (including any consequential damages, even if BWRVIP, EPRI or any EPRI representative has been advised of the possibility of such damages) resulting from your selection or use of this report or any information, apparatus, method, process or similar item disclosed in this report.

Organization(s) that prepared this report:

GE Nuclear Energy

BWRVIP Repair Committee

ORDERING INFORMATION

Requests for copies of this report should be directed to the BWRVIP Program Manager, 3412 Hillview Ave., Palo Alto, Ca. 94304, (650) 855-2340.

ACKNOWLEDGMENTS

The members of the BWRVIP Repair Committee, listed below, are gratefully acknowledged for their efforts which led to the successful completion of this document.

Julien Abramovici	GPU
Kim Bezzant	NSP
Bill Bianco	PECO
John Blomgren	ComEd
Roy Corieri	NMPC
John Disney	WPPSS
Bob Geier	ComEd
Charles Martin	BECo
Bruce McLeod	SNC
Priit Okas	NYPA
Jim O'Sullivan	PP&L
Gary Park	IES
Paul Phelan	Yankee
Robert Phillips	TVA
Rick Rogoski	First Energy
Aurelio Sala	Iberdrola
John Zudans	PSE&G

GE Principal Investigators:

D.B. Drendel

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Illustrations

Executive Summary

The Boiling Water Reactor Vessel and Internals Project (BWRVIP) was formed in June 1994 as a utility-directed initiative to address BWR vessel and internals issues. This criteria document was developed by the Repair Technical Subcommittee of the BWRVIP.

This document provides the general design acceptance criteria for temporary and permanent repair of BWR low pressure coolant injection (LPCI) couplings. It is provided to assist BWR owners in designing repairs which maintain the structural integrity of the LPCI coupling during normal operation and under postulated transient and design basis accident conditions for the remaining plant life or other service life as specified by the plant owner.

Issuance of this document is not intended to imply that repair of the LPCI coupling is the only viable method for resolving cracking in the components. Due to variation in the material, fabrication, environment and as-found condition of the individual LPCI couplings, repair is only one of several options that are available. The action to be taken for individual plants will be determined by the plant licensee.

About the BWR Vessel and Internals Project

The BWR Vessel and Internals Project (BWRVIP) is an association of utilities owning and operating boiling water reactors. The project is focused exclusively on reactor vessel and vessel internals issues in operating plants. Objectives of the BWRVIP are to lead the BWR industry toward generic resolution of vessel and internals integrity and operability issues; to identify or develop generic, cost-effective strategies from which each operating plant will select the most appropriate alternative; to serve as the focal point for the regulatory interface with the industry on BWR vessel and internals integrity and operability issues; and to share information among members. EPRI manages the technical program on behalf of the utility members of the BWRVIP.

About EPRI

EPRI creates science and technology solutions for the global energy and energy services industry. U.S. electric utilities established the Electric Power Research Institute in 1973 as a nonprofit research consortium for the benefit of utility members, their customers, and society. Now known simply as EPRI, the company provides a wide range of innovative products and services to more than 700 energy-related organizations in 40 countries. EPRI's multi-disciplinary team of scientists and engineers draws on a worldwide network of technical and business expertise to help solve today's toughest energy and environmental problems.

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TR-108717

EPRI • 3412 Hillview Avenue, Palo Alto, California 94304 • PO Box 10412, Palo Alto, California 94303 USA
800.313.3774 • 650.855.2121 • askepri@epri.com • www.epri.com

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BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

September 22, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project Lower Plenum Repair Design Criteria (BWRVIP-55)," EPRI Report TR-108719, September, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Lower Plenum Repair Design Criteria (BWRVIP-55)" EPRI Report TR-108719, September, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

[signature]

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

August 21, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108719 "BWRVIP Vessel and Internals Project: Lower Plenum Repair Design Criteria (BWRVIP-55)", September, 1998

Gentlemen:

This is a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

CORPORATE HEADQUARTERS
3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

RE: TR-108719 "BWRVIP Vessel and Internals Project: Lower Plenum Repair Design Criteria (BWRVIP-55)", September, 1998

I. ARTHUR KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees, which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other

persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

August 21, 1998

Arthur Kenny

TAMSEN HELEN GAGNON
Commission # 1172409
Notary Public - California
Santa Clara County
My Comm. Expires Feb 5, 2002

Subscribed and sworn before me this day: August 21, 1998

Tamsen Helen Gagnon, Notary Public

98-378

BWRVIP

BWR Vessel &
Internals Project ______________________ *Issue Management and Resolution*

September 8, 1998

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-42 (Reference Project 704)

Reference 1: Letter from C.E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), Proprietary Request For Additional Information -- Review of "BWR Vessel And Internals Project, BWR LPCI Coupling Inspection and Flaw Evaluation Guidelines (BWRVIP-42)" (TAC NO. MA1104)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel And Internals Project, BWR LPCI Coupling Inspection and Flaw Evaluation Guidelines (BWRVIP-42)" transmitted by the Reference 1 NRC letter.

The enclosed response repeats each of the individual items in the NRC RAIs verbatim, followed by the BWRVIP response to that item.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject, please contact Dana Covill GPU Nuclear (BWRVIP Assessment Committee Technical Chairman) at (973)316-7525.

Sincerely,

Warren Bilanin

for
Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power and Light

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... was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 2000-0186

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BWRVIP

BWR Vessel & Internals Project ________ *Issue Management and Resolution*

July 13, 1998

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-27 (Reference Project 704)

Reference 1: Letter from C.E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), Proprietary Request For Additional Information -- Review of "BWR Vessel And Internals Project, Standby Liquid Control System/Core Plate DP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)" (TAC NO. 98708)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel And Internals Project, Standby Liquid Control System/Core Plate DP Inspection and Flaw Evaluation Guidelines (BWRVIP-27)" transmitted by the Reference 1 NRC letter. The enclosed response repeats each of the individual items in the NRC RAIs verbatim, followed by the BWRVIP response to that item.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject, please contact Dana Covill of GPU Nuclear (BWRVIP Assessment Committee Technical Chairman) at (973) 316-7525.

Sincerely,

C. Terry

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 2000-0186

F/57

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

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BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

July 2, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: Standby Liquid Control Line Repair Design Criteria (BWRVIP-53)," EPRI Report TR-108716, July, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Standby Liquid Control Line Repair Design Criteria (BWRVIP-53)" EPRI Report TR-108716, July, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F158

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POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

June 16, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108716 "BWRVIP Vessel and Internals Project: Standby Liquid Control Line Repair Design Criteria (BWRVIP-53)", July, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

RE: TR-108716 "BWRVIP Vessel and Internals Project: Standby Liquid Control Repair Design Criteria (BWRVIP-53)", July, 1998

I, ARTHUR KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

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> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other

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BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

June 26, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52)," EPRI Report TR-108720, June, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52)" EPRI Report TR-108720, June, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F159

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

June 16, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108720 "BWRVIP Vessel and Internals Project: Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52)", June, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Arthur Kenny
Intellectual Property Attorney
Intellectual Property Department

Enclosures

CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

RE: TR-108720 "BWRVIP Vessel and Internals Project: Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52)", June, 1998

I, ARTHUR KENNY, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other

persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

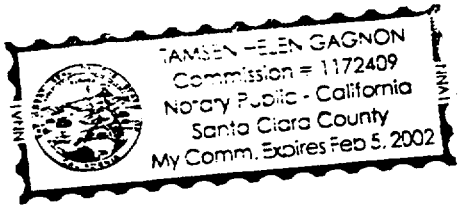
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

June 16, 1998

Arthur Kenny

Subscribed and sworn before me this day: June 16, 1998

Tamsen Helen Gagnon, Notary Public



98-187

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

May 14, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)," EPRI Report TR-108722, May, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)" EPRI Report TR-108722, May, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 2000-0186

Enclosure

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F160

59

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

April 27, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108722 "BWRVIP Vessel and Internals Project: Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)", May, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040
CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

EPRI

RE: TR-108722 "BWRVIP Vessel and Internals Project: Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)", May, 1998

I. MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040
CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

EPRI

"Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:

(1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

EPRI

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

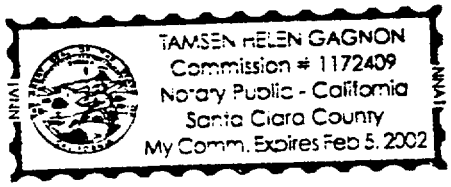
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

April 27, 1998

Mark D. Fox

Subscribed and sworn before me this day: April 27, 1998

Tamsen Helen Gagnon, Notary Public



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3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

98-190

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

May 14, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: Jet Pump Repair Design Criteria (BWRVIP-51)," EPRI Report TR-108718, May, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Jet Pump Repair Design Criteria (BWRVIP-51)" EPRI Report TR-108718, May, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please call Bruce McLeod of Southern Nuclear, BWRVIP Repair Committee Chairman, at (205) 992-7446.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

F161

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

9805220221 [illegible]

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

April 27, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108718 "BWRVIP Vessel and Internals Project: Jet Pump Repair Design Criteria (BWRVIP-51)", May, 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the repair of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

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If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000 • Telex: 82977 EPRI UF • Fax: (415) 855-1026
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CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

RE: TR-108718 "BWRVIP Vessel and Internals Project: Jet Pump Repair Design Criteria (BWRVIP-51)", May, 1998

I. MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

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Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040
CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

EPRI

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(1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

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(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

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EPRI

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

April 27, 1998

Mark D. Fox

Subscribed and sworn before me this day: April 27, 1998

Tamsen Helen Gagnon, Notary Public

TAMSEN HELEN GAGNON
Commission # 1172409
Notary Public - California
Santa Clara County
My Comm. Expires Feb 5, 2002

CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

REVISED PAGE TYPO IN DATE

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 14, 1998

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, BWR LPCI COUPLING INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-42)" (TAC NO. MA1104)

Dear Mr. Terry:

By your application dated December 11, 1997, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, BWR LPCI Coupling Inspection and Flaw Evaluation Guidelines (BWRVIP-42)," EPRI Report TR-108726, December 1997. The BWRVIP-42 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the inspection and flaw evaluation of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-42 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions
A- 2000-0186

REVISED PAGE

F162

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1

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

Carl Terry, BWRVIP Vice-Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, BWR LPCI COUPLING INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-42)" (TAC NO. MA1104)

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The NRC staff has completed its preliminary review of the BWRVIP-42 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

E J Sullivan

for

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

98-126

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

March 30, 1998

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-34 (Reference Project 704)

Reference 1: Letter from C.E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), Proprietary Request For Additional Information – Review of "BWR Vessel And Internals Project, Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)" (TAC NO. 98880)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel And Internals Project, Technical Basis for Part Circumference Weld Overlay Repair of Vessel Internal Core Spray Piping (BWRVIP-34)" transmitted by the Reference 1 NRC letter.

The enclosed response repeats each of the individual items in the NRC RAIs verbatim, followed by the BWRVIP response to that item. In some instances, the BWRVIP response indicates that a revision to the report will be made. It is our intent to make such revisions once we have received confirmation from the NRC that the proposed revisions are acceptable to the NRC and that they fully address the concern addressed in the RAI.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

Clmgt LTR Encl
PDR 1 0
NRC 1 0

D058

If you have any questions on this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Warren Bilanin

for
Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power and Light

98-125

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

March 27, 1998

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-16 (Reference Project 704)

Reference 1: Letter from C.E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), Proprietary Request For Additional Information -- Review of "BWR Vessel And Internals Project, Internal Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16)" (TAC NO. M98266)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel And Internals Project, Core Spray Internal Piping and Sparger Replacement Design Criteria (BWRVIP-16)" transmitted by the Reference 1 NRC letter.

The enclosed response repeats each of the individual items in the NRC RAIs verbatim, followed by the BWRVIP response to that item. In some instances, the BWRVIP response indicates that a revision to the report will be made. It is our intent to make such revisions once we have received confirmation from the NRC that the proposed revisions are acceptable to the NRC and that they fully address the concern addressed in the RAI.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

Change LTR Encl. 0
PDR 1 0
NUDAC 1

1/1, F164

D058

If you have any questions on this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Warren Bilanin

for
Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power and Light

MA1722

98-100

BWRVIP

BWR Vessel &
Internals Project — *Issue Management and Resolution*

March 13, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attn: C.E. Carpenter

Subject: "BWR Vessel and Internals Project: Instrument Penetration Inspection and Flaw Evaluation Guidelines (BWRVIP-49)," EPRI Report TR-108695, March, 1998.

Reference: Project 704

Enclosed are ten (10) copies of the document "BWR Vessel and Internals Project: Instrument Penetration Inspection and Flaw Evaluation Guidelines (BWRVIP-49)" EPRI Report TR-108695, March, 1998. Also enclosed are ten (10) copies of the non-proprietary version of the report. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the inspection of BWR internals.

The enclosed report is being submitted on behalf of the BWRVIP utilities. However, this submittal should not be interpreted as a commitment by all BWRVIP members to a specific course of action. Each member must formally endorse the BWRVIP position for it to become that member's position.

Please note that the enclosed proprietary document contains proprietary information. A letter requesting the report be withheld from public disclosure and affidavits describing the basis for withholding this information are provided as Attachment 1.

F165

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Company, P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

If you have any questions on this subject please call Dana Covill of GPU Nuclear, BWRVIP Assessment Committee Chairman, at (973) 316-7525.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice Chairman, BWR Vessel and Internals Project

Enclosure

EPRI
Electric Power
Research Institute

Powering Progress through Innovative Solutions

February 19, 1998

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-108695 "BWRVIP Vessel and Internals Project: BWR Instrument Penetration Inspection and Flaw Evaluation Guidelines (BWRVIP-49)", March 1998

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to inspection of the subject reactor components. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Warren Bilanin of EPRI at (650) 855-2340.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
Intellectual Property Department

Enclosures

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415)855-2000• Telex: 82977 EPRI UF • Fax: (415) 855-1026
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 296-6040

Headquarters: 3412 Hillview Avenue, Post Office Box 10412, Palo Alto, CA 94303, USA • (415) 855-2000 • www.epri.com
Washington Office: 2000 L Street, NW, Suite 805, Washington, DC 20036, USA • (202) 872-9222 • Fax: (202) 293-2697

RE: TR-108695 "BWRVIP Vessel and Internals Project: BWR Instrument Penetrations Inspection and Flaw Evaluation Guidelines (BWRVIP-49)", March, 1998

I. MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other

persons who can obtain economic value from its disclosure or use; and

(2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

February 19, 1998

Mark D. Fox

Subscribed and sworn before me this day: February 19, 1998

Tamsen Helen Gagnon, Notary Public

TAMSEN HELEN GAGNON
Commission # 1172409
Notary Public - California
Santa Clara County
My Comm. Expires Feb 5, 2002

98-015

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

January 12, 1998

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C. E. Carpenter

Subject: Missing Page from BWRVIP Response to NRC Request for Additional Information on BWRVIP-05

Reference: Letter from Carl Terry (BWRVIP Chairman) to NRC Document Control Desk, "BWRVIP Response to NRC Request for Additional Information on BWRVIP-05," dated December 18, 1997.

The letter referenced above transmitted the BWRVIP response to an NRC Request for Additional Information (RAI) on the BWRVIP-05 report. Due to problems during the copying process, page A-11 was inadvertently not included in that transmittal. Enclosed are 10 copies of page A-11 for insertion into the response previously transmitted to you.

The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

We regret and inconvenience this may have caused. If you have any questions on this transmittal please contact Larry Steinert at EPRI at (650) 855-2140.

Sincerely,

Larry Steinert

for Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power & Light Company

c: Dana Covill, GPU Nuclear

F166

99-011

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

January 11, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – BWRVIP Response to NRC Safety Evaluation of BWRVIP-18

Reference: Letter from Gus C. Lainas (NRC) to Carl Terry (BWRVIP Chairman), "Safety Evaluation of the BWR Vessel and Internals Project BWRVIP-18 Report (TAC NO. M96219)," dated June 8, 1998.

Enclosed are 10 copies of the BWRVIP response to the issues identified in the NRC Safety Evaluation (SE) on the BWRVIP report "BWR Vessel and Internals Project, Core Spray Internals Inspection and Flaw Evaluation Guidelines (BWRVIP-18)" transmitted by the NRC letter referenced above.

The enclosed response repeats the issues identified in the NRC SE of BWRVIP-18 and provides a response to each of the issues. Please note that the enclosed response proposes changes to the inspection recommendations in the original BWRVIP-18 document. Most of these significant changes were reviewed with the NRC staff in a conference call on August 25, 1998. During that conference call, the NRC staff representatives indicated that the proposed changes seemed reasonable pending NRC receipt and review of the proposed changes. These changes were discussed again in a December 17, 1998 meeting where the staff indicated they were in agreement with the responses in concept, but final approval would come after formal review of the changes.

The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

D0 SE

NOAC w/o PROP F16 7 1/1

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

PROJ. 704

If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 437-6194.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

c: Steve Lewis, Entergy

99-039

BWRVIP

BWR Vessel &
Internals Project _____ *Issue Management and Resolution*

January 29, 1999

Document Control Desk
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: Transmittal of "BWR Vessel and Internals Induction Heating Stress Improvement Effectiveness on Crack Growth in Operating Plants (BWRVIP-61)", January 1999

Enclosed are ten (10) copies of the BWRVIP report *BWR Vessel and Internals Induction Heating Stress Improvement Effectiveness on Crack Growth in Operating Plants (BWRVIP-61)*. The report is being provided for information to keep the NRC apprised of current industry activities in this area.

If you have any questions regarding this transmittal or need additional copies of the enclosed report, please call Warren Bilanin at EPRI at (650) 855-2340.

Sincerely,

Carl Terry
Niagara Mohawk Power Company
Vice-Chairman, BWR Vessel and Internals Project

Enclosure

ML003704571

DFR2 Add: TIMIR MISRA - paper copy
1/1

F168

67

February 12, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, JET PUMP ASSEMBLY INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-41)" (TAC NO. M99870)

Dear Mr. Terry:

By your application dated October 15, 1997, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)," EPRI Report TR-108728, October 1997. The BWRVIP-41 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the inspection and flaw evaluation of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-41 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. Enclosure 1 does not contain the questions 12 through 15, found on Page 2 of Enclosure 2, which addresses specific, proprietary, aspects of your submittal. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

Distribution: File Center MEMayfield EMCB Reading PUBLIC w/o Encl. 2
DOCUMENT NAME: G:\BWRVIP\BWRVIP41.RAI * see previous concurrences

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ENCLOSURE 2 IS PROPRIETARY

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 2000-0186

F169

68

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, JET PUMP ASSEMBLY INSPECTION AND FLAW EVALUATION GUIDELINES (BWRVIP-41)" (TAC NO. M99870)

Dear Mr. Terry:

By your application dated October 15, 1997, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)," EPRI Report TR-108728, October 1997. The BWRVIP-41 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the inspection and flaw evaluation of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-41 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

Distribution: File Center MEMayfield EMCB Reading

As corrected 2/4

DOCUMENT NAME: G:\BWRVIP\BWRVIP41.RAI

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ATTACHMENT IS PROPRIETARY

99-101

BWRVIP

BWR Vessel & Internals Project — *Issue Management and Resolution*

March 16, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – "BWR Vessel and Internals Project, Review of Test Data for Irradiated Stainless Steel Components (BWRVIP-66)," EPRI Report TR-112611, March 1999.

Enclosed are ten (10) copies of the report "BWR Vessel and Internals Project, Review of Test Data for Irradiated Stainless Steel Components (BWRVIP-66)," EPRI Report TR-112611, March 1999. This report is being provided to the NRC for information only.

Please note that the enclosed report contains proprietary information. A letter requesting the report be withheld from public disclosure and an affidavit describing the basis for withholding this information are provided as Attachment 1.

If you have any questions on this subject please contact Steve Lewis of Entergy, BWRVIP Assessment Committee Technical Chairman, by telephone at (601) 437-6194.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

Reply To: Carl Terry, BWRVIP Chairman, Niagara Mohawk Power Corp., P. O. Box 63, Lycoming, NY 13093 • Phone: (315) 349-7263 • Fax: (315) 349-4753

F170

69

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

March 5, 1999

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Subject: TR-112611, "BWRVIP Vessel and Internals Project, Review of Test Data for Irradiated Stainless Steel Components (BWRVIP-66)," March 1999

Gentlemen:

This a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the proprietary document identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC related to BWR internal components.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Bob Carter of EPRI Charlotte at (704) 547-6019.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
EPRI, Inc.

Enclosures (1)

RE: TR-112611, "BWRVIP Vessel and Internals Project, Review of Test Data for Irradiated Stainless Steel Components (BWRVIP-66)," March 1999

I, MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The

money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

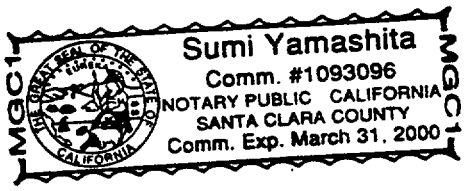
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

March 5, 1999

Mark D. Fox

Subscribed and sworn before me this day: March 5, 1999

Sumi Yamashita, Notary Public



POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

BWRVIP BWR Vessel & Internals Project 99-115

March 30, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – Response to Safety Evaluation of "BWR Vessel and Internals Project: Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03)," EPRI Report TR-105696, October 1995

References: 1) Letter from Gus Lainas (Acting Director, Division of Engineering, USNRC) to Carl Terry (BWRVIP Chairman), "Safety Evaluation of 'BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03)' (TAC No. M95369)," dated June 8, 1998.

2) Letter from Carl Terry (BWRVIP Chairman) to Document Control Desk (NRC), "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), EPRI Report TR-105696, October 1995," dated November 10, 1995.

Enclosed are ten (10) copies of the BWRVIP response to the NRC Safety Evaluation (SE) of "BWR Vessel and Internals Project: Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03)." This response is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to BWR reactor pressure vessel and internals examinations.

Several of the items raised in the SE transmitted by Reference 1 have been addressed in "BWR Vessel and Internals Project: Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03) Revision 1." BWRVIP-03R1 is being transmitted to the NRC separately.

Please note that the enclosed proprietary report contains proprietary information. Please withhold this information from public disclosure in accordance with the affidavit describing the basis for withholding this information included with Reference 2 above.

CHARLOTTE OFFICE
1300 W.T. Harris Boulevard | Charlotte | NC | 28262 | USA
P.O. Box 217097 | Charlotte | NC | 28221
Tel 704.547.6100 | Fax 704.547.6168

CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

DF02 / Add Timir - Paper Copy / Add Misra

If you have any questions on this subject please call Carl Larsen of Vermont Yankee, BWRVIP Inspection Committee Technical Chairman, at (978) 568-2091.

Sincerely,

Carl Terry
Chairman, BWR Vessel and Internals Project
Niagara Mohawk Power Corp.
P. O. Box 63
Lycoming, NY 13093

CT/dlp

Enclosure

EPRI

BWRVIP BWR Vessel & Internals Project 99-116

March 30, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – "BWR Vessel and Internals Project: Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03) Revision 1," EPRI Report TR-105696R1, March 1999.

References:
1) Letter from Gus Lainas (Acting Director, Division of Engineering, USNRC) to Carl Terry (BWRVIP Chairman), "Safety Evaluation of 'BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03)' (TAC No. M95369)," dated June 8, 1998.
2) Letter from Carl Terry (BWRVIP Chairman) to Document Control Desk (NRC), "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), EPRI Report TR-105696, October 1995," dated November 10, 1995.

Enclosed are ten (10) copies of the report "BWR Vessel and Internals Project: Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03) Revision 1," EPRI Report TR-105696R1, March 1999. This report is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to BWR reactor pressure vessel and internals examinations.

BWRVIP-03 Revision 1 contains all of the material in BWRVIP-03, in some cases revised to reflect industry experience and to address items raised in NRC's Safety Evaluation on BWRVIP-03, transmitted by Reference 1. (A full response to the SE is being transmitted to the NRC separately.) New demonstrations of NDE techniques for the core shroud and shroud support have been added. Report sections have been added for all of the other internal components that have been addressed by BWRVIP Inspection and Evaluation documents.

CHARLOTTE OFFICE
1300 W.T. Harris Boulevard | Charlotte | NC | 28262 | USA
P.O. Box 217097 | Charlotte | NC | 28221
Tel 704.547.6100 | Fax 704.547.6168

CORPORATE HEADQUARTERS
3412 Hillview Avenue | P.O. Box 10412 | Palo Alto | CA | 94303-0813 | USA
Tel 650.855.2000 | www.epri.com

F172

Please note that the enclosed proprietary report contains proprietary information. Please withhold this information from public disclosure in accordance with the affidavit describing the basis for withholding this information included with reference 2 above.

If you have any questions on this subject please call Carl Larsen of Vermont Yankee, BWRVIP Inspection Committee Technical Chairman, at (978) 568-2091.

Sincerely,

Carl Terry
Chairman, BWR Vessel and Internals Project
Niagara Mohawk Power Corp.
P. O. Box 63
Lycoming, NY 13093

CT/dlp

Enclosure

April 7, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, TOP GUIDE / CORE PLATE REPAIR DESIGN CRITERIA (BWRVIP-50)," TAC NO. MA1926

Dear Mr. Terry:

By your application dated May 14, 1998, you submitted for the NRC staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Top Guide / Core Plate Repair Design Criteria (BWRVIP-50)," EPRI report TR-108722, May 1998. The BWRVIP-50 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-50 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclosed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

Original Singed By:
C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page
Distribution:

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DOCUMENT NAME: G:\BWRVIP\BWRVIP50.RAI
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ENCLOSURE IS PROPRIETARY

F173

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 7, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, TOP GUIDE / CORE PLATE REPAIR DESIGN CRITERIA (BWRVIP-50)," TAC NO. MA1926

Dear Mr. Terry:

By your application dated May 14, 1998, you submitted for the NRC staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Top Guide / Core Plate Repair Design Criteria (BWRVIP-50)," EPRI report TR-108722, May 1998. The BWRVIP-50 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-50 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclosed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

ENCLOSURE IS PROPRIETARY

cc:

George Jones, Executive Chairman
BWRVIP Assessment Task
Pennsylvania Power & Light
A6-1
Two North Ninth Street
Allentown, PA 18101

Joe Hagan, Executive Chairman
BWRVIP Inspection Task
PECO Energy
965 Chesterbrook Blvd.
MC 62C-3
Wayne, PA 19087-5691

Lewis Sumner, Executive Chairman
BWRVIP Mitigation Task
Southern Nuclear Operating Co.
40 Inverness Center Parkway
Birmingham, AL 35201

Robert Carter, EPRI BWRVIP
Assessment Manager
Greg Selby, EPRI BWRVIP
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P. O. Box 217097
1300 W. T. Harris Blvd.
Charlotte, NC 28221

Steve Lewis, Technical Chairman
BWRVIP Assessment Task
Entergy
P. O. Box 756
Waterloo Road
Port Gibson, MS 39150

Carl Larsen, Technical Chairman
BWRVIP Inspection Task
Yankee Atomic
580 Main Street
Bolton, MA 01740

John Wilson, Technical Chairman
BWRVIP Mitigation Task
Clinton Power Station, M/C T-31C
P.O. Box 678
Clinton, IL 61727

Vaughn Wagoner, Technical Chairman
BWRVIP Integration Task
Carolina Power & Light Company
One Hannover Square 9C1
P.O. Box 1551
Raleigh, NC 27612

Bruce McLeod, Technical Chairman
BWRVIP Repair Task
Southern Nuclear Operating Co.
Post Office Box 1295
40 Inverness Center Parkway
Birmingham, AL 35201

Warren Bilanin, EPRI BWRVIP
Integration Manager
Raj Pathania, EPRI BWRVIP
Mitigation Manager
Ken Wolfe, EPRI BWRVIP
Repair Manager
Electric Power Research Institute
P. O. Box 10412
3412 Hillview Ave.
Palo Alto, CA 94303

April 7, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, STANDBY LIQUID CONTROL LINE REPAIR DESIGN CRITERIA (BWRVIP-53)," TAC NO. MA2328

Dear Mr. Terry:

By your application dated July 2, 1998, you submitted for NRC the staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Standby Liquid Control Line Repair Design Criteria (BWRVIP-53), " EPRI report TR-108716, July 1998. The BWRVIP-53 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-53 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclsoed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

Original Signed By:

C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 7, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, STANDBY LIQUID CONTROL LINE REPAIR DESIGN CRITERIA (BWRVIP-53)," TAC NO. MA2328

Dear Mr. Terry:

By your application dated July 2, 1998, you submitted for the NRC staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Standby Liquid Control Line Repair Design Criteria (BWRVIP-53)", EPRI report TR-108716, July 1998. The BWRVIP-53 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-53 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclosed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

ENCLOSURE IS PROPRIETARY

cc:

George Jones, Executive Chairman
BWRVIP Assessment Task
Pennsylvania Power & Light
A6-1
Two North Ninth Street
Allentown, PA 18101

Joe Hagan, Executive Chairman
BWRVIP Inspection Task
PECO Energy
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MC 62C-3
Wayne, PA 19087-5691

Lewis Sumner, Executive Chairman
BWRVIP Mitigation Task
Southern Nuclear Operating Co.
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Birmingham, AL 35201

Robert Carter, EPRI BWRVIP
Assessment Manager
Greg Selby, EPRI BWRVIP
Inspection Manager
EPRI NDE Center
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Charlotte, NC 28221

Steve Lewis, Technical Chairman
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Carl Larsen, Technical Chairman
BWRVIP Inspection Task
Yankee Atomic
580 Main Street
Bolton, MA 01740

John Wilson, Technical Chairman
BWRVIP Mitigation Task
Clinton Power Station, M/C T-31C
P.O. Box 678
Clinton, IL 61727

Vaughn Wagoner, Technical Chairman
BWRVIP Integration Task
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P.O. Box 1551
Raleigh, NC 27612

Bruce McLeod, Technical Chairman
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40 Inverness Center Parkway
Birmingham, AL 35201

Warren Bilanin, EPRI BWRVIP
Integration Manager
Raj Pathania, EPRI BWRVIP
Mitigation Manager
Ken Wolfe, EPRI BWRVIP
Repair Manager
Electric Power Research Institute
P. O. Box 10412
3412 Hillview Ave.
Palo Alto, CA 94303

April 8, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, JET PUMP REPAIR DESIGN CRITERIA (BWRVIP-51)," TAC NO. MA1927

Dear Mr. Terry:

By your application dated May 14, 1998, you submitted for the NRC staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Jet Pump Repair Design Criteria (BWRVIP-51)," EPRI Report TR-108718, May 1998. The BWRVIP-51 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-51 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclosed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

Original Signed By:
C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 8, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF "BWR VESSEL AND INTERNALS PROJECT, JET PUMP REPAIR DESIGN CRITERIA (BWRVIP-51)," TAC NO. MA1927

Dear Mr. Terry:

By your application dated May 14, 1998, you submitted for the NRC staff to review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Jet Pump Repair Design Criteria (BWRVIP-51)," EPRI Report TR-108718, May 1998. The BWRVIP-51 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-51 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible, in order for the NRC staff to complete its review in a timely manner. Since the enclosed concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Component Integrity Section
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

ENCLOSURE IS PROPRIETARY

cc:

Karl W. Singer, Executive Chair
BWRVIP Assessment Task
Tennessee Valley Authority
PO Box 2000
Decaltur, AL 35602-2000

Bill Eaton, Executive Chair
Inspection Committee
Entergy Operations, Inc.
PO Box 756, Waterloo Rd
Port Gibson, MS 39150-0756

H. Lewis Sumner, Executive Chairman
BWRVIP Mitigation Task
Southern Nuclear Operating Co.
M/S BIN B051, PO Box 1295
40 Inverness Center Parkway
Birmingham, AL 35201

Harry P. Salmon, Executive Chairman
BWRVIP Integration Task
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123 Main St., M/S 11 D
White Plains, NY 10601-3104

George T. Jones, Executive Chair
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Charlotte, NC 28221

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Wayne, PA 19807-5691

Steve Lewis, Technical Chairman
BWRVIP Assessment Task
Entergy
P. O. Box 756
Waterloo Road
Port Gibson, MS 39150

Carl Larsen, Technical Chairman
BWRVIP Inspection Task
Yankee Atomic
580 Main Street
Bolton, MA 01740

John Wilson, Technical Chairman
BWRVIP Mitigation Task
Clinton Power Station, M/C T-31C
P.O. Box 678
Clinton, IL 61727

Vaughn Wagoner, Technical Chairman
BWRVIP Integration Task
Carolina Power & Light Company
One Hannover Square 9C1
P.O. Box 1551
Raleigh, NC 27612

Bruce McLeod, Technical Chairman
BWRVIP Repair Task
Southern Nuclear Operating Co.
Post Office Box 1295
40 Inverness Center Parkway
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Warren Bilanin, EPRI BWRVIP
Integration Manager
Raj Pathania, EPRI BWRVIP
Mitigation Manager
Ken Wolfe, EPRI BWRVIP
Repair Manager
Electric Power Research Institute
P. O. Box 10412
3412 Hillview Ave.
Palo Alto, CA 94303

James P. Pelletier, BWRVIP Liaison
to EPRI Nuclear Power Council
Nebraska Public Power District
1200 Prospect Avenue
PO Box 98
Brownville, NE 68321-0098

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 29, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: STAFF'S COMMENTS ON THE BWR VESSEL AND INTERNALS PROJECT'S RESPONSE TO THE NRC'S REQUEST FOR ADDITIONAL INFORMATION ON THE INSPECTION OF BWR AXIAL SHELL WELDS (TAC NO. MA3395)

Dear Mr. Terry:

By letter dated December 15, 1998, you responded to the NRC staff's Request for Additional Information (RAI) dated June 8, 1998, related to the staff's review of the Electric Power Research Institute's (EPRI) proprietary report TR-105697, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)." This report was submitted to the NRC staff for review by letter dated September 28, 1995, and was modified and supplemented by letters dated June 24 and October 29, 1996, May 16, June 4, June 13, and December 18, 1997, and January 13, 1998.

The BWRVIP-05 report, as modified and supplemented, provided recommendations for alternative inspection requirements of BWR reactor pressure vessel (RPV) shell welds, and provided a technical basis for these recommended requirements. As modified, the BWRVIP-05 report proposed to reduce the scope of inservice inspections (ISI) of the BWR RPV shell welds from essentially 100 percent of all RPV shell welds to essentially 100 percent of the axial shell welds and eliminate the inspection of all but a few percent of circumferential shell welds. The staff concluded in its safety evaluation dated July 28, 1998, that BWR licensees may request permanent (i.e., for the remaining term of operation under the existing, initial, license) relief from the ISI requirements of 10 CFR 50.55a(g) for the volumetric examination of circumferential shell welds, but that additional analyses of the axial welds needed to be performed.

The NRC staff's June 8, 1998, RAI requested that the BWRVIP provide (1) additional probabilistic fracture mechanics (PFM) analyses of the axial welds, (2) a risk-informed assessment based on the results of the PFM analyses and the guidance in Regulatory Guide 1.174, and (3) a proposed course of action to ensure vessel integrity based on the results of the analysis and assessment.

In reviewing your response to this RAI, the NRC staff does not agree with the BWRVIP's analysis. Specifically, as discussed in the attached NRC staff comments, the method intended for use in evaluating the conditional probability of failure (CPF) for the typical 40-year license period of a BWR did not provide a CPF value that was appropriate for RPV safety assessments. In addition, the NRC staff does not agree with implementation of the methodology within the analysis in that it credits 100 percent inspection of axial welds, which have generally not been performed at all BWR plants.

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ENCLOSURE CONTAINS PROPRIETARY INFORMATION

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The NRC staff has scheduled a meeting with the BWRVIP for May 18, 1999, at NRC Headquarters in Rockville, Maryland to discuss the staff comments and determine the appropriate course of action by the BWRVIP in addressing this issue.

The NRC staff requests that the BWRVIP review the items in the attachment, and contact C. E. (Gene) Carpenter, Jr., of my staff, at (301) 415-2169, if any further clarification is required.

Sincerely,

original signed by:

Jack R. Strosnider, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

The NRC staff has scheduled a meeting with the BWRVIP for May 18, 1999, at NRC Headquarters in Rockville, Maryland to discuss the staff comments and determine the appropriate course of action by the BWRVIP in addressing this issue.

The NRC staff requests that the BWRVIP review the items in the attachment, and contact C. E. (Gene) Carpenter, Jr., of my staff, at (301) 415-2169, if any further clarification is required.

Sincerely,

Jack R. Strosnider, Director
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

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May 10, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
Washington DC 20555-0001

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 -- BWRVIP Response to Item 15 in NRC Request for Additional Information on BWRVIP-38

References:
1. Letter from C. E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), "Proprietary Request for Additional Information – Review of BWR Vessel and Internals Project, Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38)," dated April 8, 1998.
2. Letter from Vaughn Wagoner (Technical Chairman, BWRVIP Integration Committee) to C. E. Carpenter (NRC), "PROJECT NO. 704 – BWRVIP Response to NRC Request for Additional Information on BWRVIP-38," dated November 28, 1998.

Enclosed are 10 copies of the BWRVIP response to Item 15 in the Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Shroud Support Inspection and Flaw Evaluation Guidelines (BWRVIP-38)" transmitted by the NRC letter identified as Reference 1 above. The BWRVIP previously transmitted the responses to the other items in the RAI on BWRVIP-38 to the NRC by the letter identified as Reference 2 above.

The enclosed response repeats Item 15 in the NRC RAI verbatim, followed by the BWRVIP response to that item.

As indicated in the NRC letter identified as Reference 1 above, the enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

F17

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If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 437-6194.

Sincerely,

Carl Terry
Chairman, BWR Vessel and Internals Project
Niagara Mohawk Power Corp.
P. O. Box 63
Lycoming, NY 139=093

c: Steve Lewis, Entergy

POWERING PROGRESS THROUGH
SCIENCE AND TECHNOLOGY

EPRI

June 30, 1999

Document Control Clerk
U.S. Nuclear Regulatory Commission
OWFN 11555 Rockville Pike
Rockville, MD 20782

Subject: TR-113170, "BWRVIP Vessel and Internals Project, Shroud Vertical Weld Inspection and Evaluation Guidelines (BWRVIP-63)," June 1999

Dear Sir or Madam:

This is a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the information identified in the enclosed affidavit consisting of EPRI owned Proprietary Information identified above (the "Report"). Ten copies of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the inspection of BWR internals. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Tom Mulford of EPRI at (650) 855-2766.

Sincerely,

Mark D. Fox
Intellectual Property Counsel
EPRI, Inc.

Enclosures ( )

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in accordance with the Freedom of Information
Act, exemptions 4
FOIA- 2000-0186

CORPORATE HEADQUARTERS
3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

F178

9907080221 /PDR

77

EPRI

AFFIDAVIT

RE: TR-113170, "BWRVIP Vessel and Internals Project, Shroud Vertical Weld Inspection and Evaluation Guidelines (BWRVIP-63)," June 1999

I, MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for reviewing the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for its withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790(a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying the Report as trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

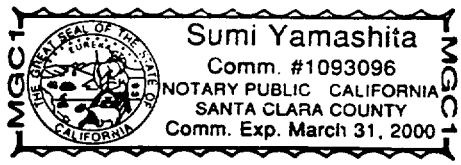
Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

June 30, 1999

Mark D. Fox

Subscribed and sworn before me this day: June 30, 1999

Sumi Yamashita, Notary Public



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EPRI

BWRVIP BWR Vessel & Internals Project 99-306

August 4, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-41 (Reference Project 704)

Reference 1: Letter from C.E. Carpenter, Jr., (NRC) to Carl Terry (BWRVIP Chairman), Proprietary Request For Additional Information -- Review of "BWR Vessel And Internals Project, Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)" (TAC NO. M99870)) Letter dated 2/12/99.

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel And Internals Project, Jet Pump Assembly Inspection and Flaw Evaluation Guidelines (BWRVIP-41)" transmitted by the Reference 1 NRC letter. The enclosed response repeats each of the individual items in the NRC RAIs, followed by the BWRVIP response to that item.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject, please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) at (601) 437-6194.

Sincerely,

Tom J. Mulford for

Vaughn Wagoner
Chairman, BWRVIP Integration Committee

F179

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BWRVIP BWR Vessel & Internals Project 99-308

August 5, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Safety Evaluation on BWRVIP-26 (Reference Project 704)

Reference 1: Letter from Jack R. Strosnider (NRC) to Carl Terry (BWRVIP Chairman), Safety Evaluation of the "BWR Vessel and Internals Project, BWR Top Guide Inspection and Flaw Evaluation Guidelines (BWRVIP-26)", EPRI Report TR-107285, December, 1996 (TAC NO. M97803). SE dated 5/18/99.

Enclosed are 10 copies of the BWRVIP response to the NRC Safety Evaluation (SE) on the BWRVIP report "BWR Vessel And Internals Project, Top Guide Inspection and Flaw Evaluation Guidelines (BWRVIP-26)" transmitted by the Reference 1 NRC letter. The enclosed response repeats each of the individual issues in the NRC SE, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject, please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) at (601) 437-6194.

Sincerely,

Tom J. Mulford for

Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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Gene

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

August 13, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - REVIEW OF EPRI TOPICAL REPORTS TR-10872, TR-108719, AND TR-108721 (TAC NOs. MA33673 AND MA4464)

Dear Mr. Terry:

By your applications dated June 26, September 28, and December 16, 1998, respectively, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary reports TR10872, "BWR Vessel and Internals Project, Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52);" TR 108719 "BWR Vessel and Internals Project, Lower Plenum Repair Design Criteria (BWRVIP-55)," and TR-108721, "BWR Vessel and Internals Project, Instrument Penetration Repair Design Criteria (BWRVIP-57)," for NRC staff review and approval. These reports were submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the repair of the subject reactor components.

The NRC staff has completed its preliminary review of the BWRVIP-52, -55 and -57 reports. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

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cc:

Karl W. Singer, Executive Chair
BWRVIP Assessment Task
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Bill Eaton, Executive Chair
Inspection Committee
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Port Gibson, MS 39150-0756

H. Lewis Sumner, Executive Chairman
BWRVIP Mitigation Task
Southern Nuclear Operating Co.
M/S BIN B051, PO Box 1295
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Harry P. Salmon, Executive Chairman
BWRVIP Integration Task
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George T. Jones, Executive Chair
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Bruce McLeod, Technical Chairman
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Tom Mulford, EPRI BWRVIP
Integration Manager
Raj Pathania, EPRI BWRVIP
Mitigation Manager
Ken Wolfe, EPRI BWRVIP
Repair Manager
Electric Power Research Institute
P. O. Box 10412
3412 Hillview Ave.
Palo Alto, CA 94303

James P. Pelletier, BWRVIP Liaison
to EPRI Nuclear Power Council
Nebraska Public Power District
1200 Prospect Avenue
PO Box 98
Brownville, NE 68321-0098

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BWRVIP BWR Vessel & Internals Project 99-501

December 6, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-52 (Project 704)

Reference 1: Letter from C.E. Carpenter to Carl Terry dated 8/13/99, "Proprietary Request for Additional Information - Review of EPRI Topical Reports TR-10872, TR-108719, and TR-108721 (TAC NOs. MA33673 and MA4464)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Shroud Support and Vessel Bracket Repair Design Criteria (BWRVIP-52)." The RAI was transmitted by the NRC to the BWRVIP in the Reference 1 letter. The enclosed response to the RAI repeats each of the individual issues in the NRC RAI, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions regarding this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Tom J. Mulford for

Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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BWRVIP BWR Vessel & Internals Project 99-369

September 21, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C.E. Carpenter

Subject: Project 704 – "BWRVIP Vessel and Internals Project, BWR Reactor Pressure Vessel Inspection and Flaw Evaluation Guidelines (BWRVIP-74)," EPRI Report TR-113596, September 1999

Enclosed are ten (10) copies of the document "BWRVIP Vessel and Internals Project, BWR Reactor Pressure Vessel Inspection and Flaw Evaluation Guidelines (BWRVIP-74)," EPRI Report TR-113596, September 1999. This document is being submitted as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the inspection of BWR internals.

Please note that the enclosed document contains proprietary information. A letter requesting the report be withheld from public disclosure and an affidavit describing the basis for withholding this information are provided as an Attachment 1.

If you have any questions on this subject please call Steve Lewis of Entergy, BWRVIP Assessment Committee Technical Chairman, at (601) 368-5444.

Sincerely,

Carl Terry

Chairman, BWR Vessel and Internals Project
Niagara Mohawk Power Company
P. O. Box 63
Lycoming, NY 13093

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September 14, 1999

Document Control Clerk
U.S. Nuclear Regulatory Commission
OWFN 11555 Rockville Pike
Rockville, MD 20782

Subject: TR-113596, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Inspection and Flaw Evaluation Guidelines (BWRVIP-74)," September 1999.

Dear Sir or Madam:

This is a request under 10CFR2.790(a)(4) that the NRC withhold from public disclosure the information identified in the enclosed affidavit consisting of EPRI owned Proprietary Information identified above (the "Report"). A copy of the Report and the affidavit in support of this request are enclosed.

EPRI desires to disclose the Report to the NRC as a means of exchanging information with the NRC for the purpose of supporting generic regulatory improvements related to the inspection of BWR internals. EPRI would welcome any discussions between EPRI and the NRC related to the Report that the NRC desires to conduct.

The Report is for the NRC's internal use and may be used only for the purpose for which it is disclosed by EPRI. The Report should not be otherwise used or disclosed to any person outside the NRC without prior written permission from EPRI.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (650) 855-8957. Questions on the contents of the Report should be directed to Tom Mulford of EPRI at (650) 855-2766.

Sincerely,

Mark D. Fox
Intellectual Property Attorney
EPRI, Inc.

Enclosures (1)

cc: Ken Wolfe, EPRI

CORPORATE HEADQUARTERS
3412 Hillview Avenue | Palo Alto CA 94304-1395 USA | 650.855.2000 | Customer Service 800.313.3774 | www.epri.com

EPRI

AFFIDAVIT

RE: TR-113596, "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Inspection and Flaw Evaluation Guidelines (BWRVIP-74)," September 1999.

I MARK D. FOX, being duly sworn, depose and state as follows:

I am an attorney at the Electric Power Research Institute ("EPRI") and I have been specifically delegated responsibility for the report listed above that is sought under this affidavit to be withheld (the "Report") and authorized to apply for their withholding on behalf of EPRI. This affidavit is submitted to the Nuclear Regulatory Commission ("NRC") pursuant to 10 CFR 2.790 (a)(4) based on the fact that the Report consists of trade secrets of EPRI and that the NRC will receive the Report from EPRI under privilege and in confidence.

The basis for which the Report should be withheld from the public is set forth below:

(i) The Report has been held in confidence by EPRI, its owner. All those accepting copies of the Report must agree to preserve the confidentiality of the Report.

(ii) The Report is of a type customarily held in confidence by EPRI and there is a rational basis therefor. The Report is of a type that EPRI considers to be trade secrets and is held in confidence by EPRI because to disclose it would prevent EPRI from licensing the Report at fees which would allow EPRI to recover its investment. If consultants and other businesses providing services in the electric/nuclear power industry were able to publicly obtain the Report, they would be able to use it commercially for profit and avoid spending the large amount of money that EPRI was required to spend to prepare the Report. The rational basis that EPRI has for classifying Report as a trade secrets is the Uniform Trade Secrets Act which California adopted in 1984 and which has been adopted by over twenty states. The Uniform Trade Secrets Act defines a "trade secret" as follows:

> "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique, or process, that:
>
> (1) Derives independent economic value, actual or potential, from not being generally known to the public or to other persons who can obtain economic value from its disclosure or use; and
>
> (2) Is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.

(iii) The Report will be transmitted to the NRC in confidence.

(iv) The Report is not available in public sources. EPRI developed the Report only after making a determination that the Report was not available from public sources. It required a large expenditure of dollars for EPRI to develop the Report. In addition, EPRI was required to use a large amount of time of EPRI employees. The money spent, plus the value of EPRI's staff time in preparing the Report, show that the Report is highly valuable to EPRI. Finally, the Report was developed only after a long period of effort of at least several months.

(v) A public disclosure of the Report would be highly likely to cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Report both domestically and internationally. The Report can be properly acquired or duplicated by others only with an equivalent investment of time and effort.

I have read the foregoing and the matters stated therein are true and correct to the best of my knowledge, information and belief. I make this affidavit under penalty of perjury under the laws of the United States of America and under the laws of the State of California.

Executed at 3412 Hillview Avenue, Palo Alto, being the premises and place of business of the Electric Power Research Institute:

September 14, 1999

Mark D. Fox, Esq.

Subscribed and sworn before me this day: September 14, 1999

Sumi Yamashita, Notary Public

Sumi Yamashita
Comm. #1093096
NOTARY PUBLIC CALIFO
SANTA CLARA COUN
Comm. Exp. March 31

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BWRVIP BWR Vessel & Internals Project 99-428

October 21, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – BWRVIP Response to NRC Safety Evaluation of BWRVIP-42

Reference: Letter from Jack Strosnider to Carl Terry, "Safety Evaluation of the "BWR Vessel And Internals Project, LPCI Coupling Inspection And Flaw Evaluation Guidelines (BWRVIP-42)," (TAC NO. MA1102)" (Letter dated 6/14/99)

Enclosed are 10 copies of the BWRVIP response to the issues identified in the NRC Safety Evaluation (SE) on the BWRVIP report "BWR Vessel and Internals Project, LPCI Coupling Inspection and Flaw Evaluation Guidelines (BWRVIP-42)" transmitted by the NRC letter referenced above.

The enclosed response repeats the issues identified in the NRC SE and provides a response to each of the issues.

The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 368-5444.

Sincerely,

Carl Terry
Niagara Mohawk Power Corp.
Chairman, BWR Vessel and Internals Project

c: Steve Lewis, Entergy

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BWRVIP BWR Vessel & Internals Project 99-450

November 4, 1999

TO: PWR MRP Reactor Internals Issue Task Group (Utility Members Only)

FROM: Tom Mulford Tom J. Mulford
EPRI BWRVIP Manager

SUBJECT: PWR MRP Use of BWRVIP EVT-1 Information

The purpose of this letter is to reply to the request by the PWR MRP Reactor Internals (RI) Issue Task Group (ITG) to obtain and utilize the enhanced VT-1 (EVT-1) inspection information developed by the BWRVIP.

In the course of providing guidance for inspection and evaluation of BWR internals, the BWRVIP developed unique visual inspection recommendations for the performance of in-vessel visual inspections for identifying cracking or other significant degradation. Specifically, the BWRVIP has provided guidance described as enhanced VT-1 (EVT-1) that is a visual inspection method where the equipment and environmental conditions are such that they can achieve a ½ mil (0.0005 inch) resolution. The BWRVIP document "BWR Vessel and Internals Project, Reactor Pressure Vessel and Internals Examination Guidelines (BWRVIP-03), Revision 1," provides generic standards for conducting EVT-1 and other visual examinations. The NRC staff has issued a Safety Evaluation that states the guidance in the BWRVIP-03, Revision 1 report is acceptable for inspection of the safety-related BWR RPV internal components.

The BWRVIP has considered the request by the PWR MRP and agrees that the PWR MRP RI ITG may utilize the BWRVIP EVT-1 information. Attached is Section 2.5 from "BWRVIP-03, Revision 1" that can be used by the PWR MRP RI ITG under the conditions described in the next paragraph. This Section 2.5, "Generic Standards for Visual Inspection of Reactor Pressure Vessel Internals, Components, and Associated Repairs," includes the BWRVIP EVT-1 inspection information.

Please note that this EVT-1 information is being provided to the PWR MRP with the understanding that the PWR MRP agrees to likewise reciprocate and share similar PWR MRP information with the BWRVIP in the future if such a need should arise. Also note that the enclosed information from Section 2.5 of BWRVIP-03, Revision 1, contains proprietary information that is the intellectual property of BWRVIP utility members and EPRI and must be handled in accordance with the Proprietary Information Notice on the title page. This information is being provided to the PWR MRP RI ITG utility members

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for use only within their own organizations. The enclosed information can be provided to other organizations only under license from EPRI.

If you have any questions on this information, please contact me by telephone at 650.855.2766 or by e-mail at tmulford@epri.com

c: Mike Short, SCE, PWR MRP IIG Chairman
BWRVIP Executive Oversight Committee, w/o Attachment
BWRVIP Integration Committee, w/o Attachment
BWRVIP EPRI Task Managers
Gene Carpenter, USNRC, w/o Attachment

A

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BWRVIP BWR Vessel & Internals Project 99-471

November 12, 1999

Document Control Desk
U. S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Attention: C. E. Carpenter

Subject: PROJECT NO. 704 – Response to NRC Comments on BWRVIP Analyses of BWR Reactor Pressure Vessel Axial Shell Welds

Reference: Letter from Jack R. Strosnider (NRC) to Carl Terry (BWRVIP Chairman), "Staff's Comments on the BWR Vessel and Internals Project's Response to the NRC's Request for Additional Information on the Inspection of BWR Axial Shell Welds (TAC NO. MA3395)," dated April 29, 1999.

Enclosed are 10 copies of the BWRVIP response to the NRC comments on the BWRVIP analyses of BWR reactor pressure vessel axial shell welds transmitted by the NRC letter referenced above. The enclosed information relates to axial welds as discussed in the BWRVIP report "BWR Vessel and Internals Project, BWR Reactor Pressure Vessel Shell Weld Inspection Recommendations (BWRVIP-05)."

The enclosed information concerns a report that the NRC staff has found to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions on this subject please contact Steve Lewis of Entergy (BWRVIP Assessment Committee Technical Chairman) by telephone at (601) 368-5444.

Sincerely,

Tom J. Mulford

for Vaughn Wagoner
Technical Chairman
BWRVIP Integration Committee
Carolina Power & Light Company

c: Steve Lewis, Entergy

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5

November 29, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - ON EPRI TR-108710, "EVALUATION OF CRACK GROWTH IN BWR NICKEL BASE AUSTENITIC ALLOYS IN RPV INTERNALS (BWRVIP–59)" (TAC NO. MA4467)

Dear Mr. Terry:

By your application dated December 23, 1998, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Nickel Base Austenitic Alloys in RPV Internals (BWRVIP-59)," EPRI Report TR-108710, December 1998. The BWRVIP-59 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the evaluation of crack growth in BWR nickel base reactor pressure vessel (RPV) internals.

The NRC staff has completed its preliminary review of the BWRVIP-59 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

original signed by:

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated
cc: See next page

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 29, 1999

Carl Terry, BWRVIP Chairman
Niagara Mohawk Power Company
Post Office Box 63
Lycoming, NY 13093

SUBJECT: PROPRIETARY REQUEST FOR ADDITIONAL INFORMATION - ON EPRI TR-108710, "EVALUATION OF CRACK GROWTH IN BWR NICKEL BASE AUSTENITIC ALLOYS IN RPV INTERNALS (BWRVIP-59)" (TAC NO. MA4467)

Dear Mr. Terry:

By your application dated December 23, 1998, you submitted for NRC staff review the Electric Power Research Institute (EPRI) proprietary report, "BWR Vessel and Internals Project, Evaluation of Crack Growth in BWR Nickel Base Austenitic Alloys in RPV Internals (BWRVIP-59)," EPRI Report TR-108710, December 1998. The BWRVIP-59 report was submitted as a means of exchanging information with the staff for the purpose of supporting generic regulatory efforts related to the evaluation of crack growth in BWR nickel base reactor pressure vessel (RPV) internals.

The NRC staff has completed its preliminary review of the BWRVIP-59 report. As indicated in the enclosed request for additional information (RAI), the NRC staff has determined that additional information is needed. We request that BWRVIP respond to the RAI as soon as possible in order for the NRC staff to complete its review in a timely manner. Since the attached concerns a report that the NRC staff has found to be proprietary in nature, the requested information will also be considered proprietary, as appropriate.

If you have any questions, please contact me at (301) 415-2169.

Sincerely,

C. E. Carpenter, Jr., Lead Project Manager
Materials and Chemical Engineering Branch
Division of Engineering
Office of Nuclear Reactor Regulation

Enclosure: As stated

cc: See next page

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BWRVIP BWR Vessel & Internals Project 99-498

December 6, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Safety Evaluation on BWRVIP-16 and BWRVIP-19 (Project 704)

Reference 1: Letter from Gus Lainas to Carl Terry dated 11/17/98, "Internal Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-16)" EPRI Report TR-106708, March 1997; and of The "BWRVIP Vessel And Internals Project, Internal Core Spray Piping and Sparger Repair Design Criteria (BWRVIP-19)" EPRI Report TR-106893, September 1996 (TAC NOs. M98266 and M96539)"

Enclosed are 10 copies of the BWRVIP response to the NRC Safety Evaluation (SE) on the BWRVIP reports "BWR Vessel and Internals Project, Internal Core Spray Piping and Sparger Replacement Design Criteria (BWRVIP-19)" and "BWR Vessel and Internals Project, Internal Core Spray Piping and Sparger Repair Design Criteria (BWRVIP-16)." The SE was transmitted by the NRC to the BWRVIP in the Reference 1 letter. The enclosed response to the SE repeats each of the individual issues in the NRC SE, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject reports to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions regarding this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Tom J. Mulford for
Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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BWRVIP BWR Vessel & Internals Project 99-504

December 6, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-57 (Project 704)

Reference 1: Letter from C.E. Carpenter to Carl Terry dated 8/13/99, "Proprietary Request for Additional Information - Review of EPRI Topical Reports TR-10872, TR-108719, and TR-108721 (TAC NOs. MA33673 and MA4464)

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Instrument Penetration Repair Design Criteria (BWRVIP-57)." The RAI was transmitted by the NRC to the BWRVIP in the Reference 1 letter. The enclosed response to the RAI repeats each of the individual issues in the NRC RAI, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions regarding this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Tom J. Mulford for

Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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BWRVIP BWR Vessel & Internals Project 99-499

December 6, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-50 (Project 704)

Reference 1: Letter from C.E. Carpenter to Carl Terry dated 4/7/99, "Proprietary Request For Additional Information - Review Of "BWR Vessel And Internals Project, Top Guide / Core Plate Repair Design Criteria (BWRVIP-50)," TAC NO. MA1926"

Reference 2: Letter from C.E. Carpenter to Carl Terry dated 5/24/99 "Second Proprietary Request for Additional Information for Review of "BWR Vessel and Internals Project, Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)," (TAC NO. MA1926)"

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Top Guide/Core Plate Repair Design Criteria (BWRVIP-50)." The RAI was transmitted by the NRC to the BWRVIP in the Reference 1 and 2 letters. The enclosed response to the RAI repeats each of the individual issues in the NRC RAI, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions regarding this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Tom J. Mulford for
Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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BWRVIP BWR Vessel & Internals Project 99-500

December 6, 1999

Document Control Desk
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Attention: C.E. Carpenter

Subject: BWRVIP Response to NRC Request for Additional Information on BWRVIP-51 (Project 704)

Reference 1: Letter from C.E. Carpenter to Carl Terry dated 4/8/99, "Proprietary Request For Additional Information - Review of "BWR Vessel And Internals Project, Jet Pump Repair Design Criteria (BWRVIP-51)," TAC NO. MA1927"

Enclosed are 10 copies of the BWRVIP response to the NRC Request for Additional Information (RAI) on the BWRVIP report "BWR Vessel and Internals Project, Jet Pump Repair Design Criteria (BWRVIP-51)." The RAI was transmitted by the NRC to the BWRVIP in the Reference 1 letter. The enclosed response to the RAI repeats each of the individual issues in the NRC RAI, followed by the BWRVIP response to that issue.

As indicated in the referenced letter, the NRC staff has found the subject report to be proprietary in nature. Therefore, the enclosed information is also proprietary and should be withheld from public disclosure.

If you have any questions regarding this subject, please contact Bruce McLeod of Southern Nuclear (BWRVIP Repair Committee Technical Chairman) at (205) 992-7446.

Sincerely,

Tom J. Mulford for
Vaughn Wagoner
Chairman, BWRVIP Integration Committee

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