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**Proprietary – Withhold under 10 CFR 2.390. Enclosure 1 contains
PROPRIETARY information**

August 13, 2015
GO2-15-110

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555-0001

**Subject: COLUMBIA GENERATING STATION, DOCKET NO. 50-397
RESUBMITTAL – DEVIATION FROM BWRVIP FLAW EVALUATION
REQUIREMENTS FOR JET PUMP RISER INDICATION**

References: (1) BWRVIP Letter 2012-074, From Chuck Wirtz and Randy Stark to All
BWRVIP Committee Members, "Superseded 'Needed' Guidance
Regarding Crack Growth Assumptions" dated March 22, 2012.

(2) Letter from DW Gregoire (Energy Northwest) to NRC, "Deviation from
BWRVIP Flaw Evaluation Requirements for Jet Pump Riser Indication,"
dated April 14, 2015 (GO2-15-056).

Dear Sir or Madam:

Pursuant to Boiling Water Reactor Vessel & Internal Project (BWRVIP)-94 Revision 2 requirements, Energy Northwest is herewith notifying the Nuclear Regulatory Commission (NRC) of a deviation from BWRVIP flaw evaluation guidance for intergranular stress corrosion crack growth (Reference 1) as applicable to an evaluation of a flaw indication reported by Columbia Generating Station (Columbia) at a reactor jet pump riser.

During Columbia's Refueling Outage R-20 In-Vessel Visual Inspection (IVVI) campaign, an indication was reported on the jet pump (JP) riser to riser brace weld (RS-9) for jet pump pair 17 and 18. The indication is near the toe of the RS-9 weld on the JP-17 side of the riser and is approximately 1.25 inches in length crossing the heat affected zone (HAZ) of the RS-9 weld.

A001
NRR

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The BWRVIP guidance (Reference 1) defines an intergranular stress corrosion crack (IGSCC) growth rate in the length direction for austenitic stainless steel for all flaw evaluations, all irradiation levels and all water chemistries, which shall be assumed at both ends of a crack unless a means exists to physically arrest crack growth (e.g., stop drilling).

Columbia's jet pump riser evaluation performed by GE Hitachi Nuclear Energy (GEH) and documented in their Report 001N6043.5 (Enclosure 1) deviates from BWRVIP guidance by applying a lower intergranular stress corrosion crack growth rate in the length direction at one crack tip instead of the standard crack lengthening rate specified in the BWRVIP guidance. The flaw evaluation applies the standard crack growth rate at the other crack tip so the deviation is only applicable to one crack tip. The use of a lower IGSCC crack growth rate at one crack tip is considered reasonable based on the material condition at the crack tip, mitigation of IGSCC through effective hydrogen water chemistry (HWC), and industry and plant experience which shows low IGSCC crack growth rates for similar indications. Crack growth due to fatigue is considered the primary driver to crack growth and is appropriately considered in the evaluation without deviation.

This letter and supporting evaluation (Enclosure 1) are being transmitted for information only in accordance with BWRVIP-94 Revision 2 requirements and Energy Northwest is not requesting any action from the NRC staff. GEH and Electric Power Research Institute (EPRI) consider information contained in Enclosure 1 to be proprietary and, therefore, request that it be withheld from public disclosure in accordance with 10 CFR 2.390. A redacted/non-proprietary version of the evaluation document is included as Enclosure 2. An affidavit from GEH justifying the proprietary information is included as Enclosure 3. A separate affidavit from EPRI justifying the EPRI proprietary information contained within Enclosure 1 is provided as Enclosure 4.

This letter and its enclosures supersede the previously submitted notification letter (Reference 2) in its entirety.

There are no commitments contained in this letter.

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Should you have any questions concerning this letter, please contact JR Trautvetter, Regulatory Compliance Supervisor, at (509) 377-4337.

When Enclosure 1 is removed from this letter, the letter and remaining enclosures are NON-PROPRIETARY.

Executed on the 13th day of August, 2015

Respectfully,



A Javorik
VP, Engineering

- Enclosure 1: GE Hitachi Nuclear Energy, "Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation at 106% Rated Core Flow (115 Mlbs/hr)," Report 001N6043.5 Revision 2 PLM Specification 001N6043 Revision 5 dated August 2015. GEH Proprietary Information – Class II (Internal). **[PROPRIETARY evaluation document]**
- Enclosure 2: GE Hitachi Nuclear Energy, "Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation at 106% Rated Core Flow (115 Mlbs/hr)," Report 001N6043.5-NP Revision 2 PLM Specification 001N6043 Revision 5 dated August 2015. Non-Proprietary Information – Class I (Public). **[NON-PROPRIETARY evaluation document]**
- Enclosure 3: GE-Hitachi Nuclear Energy Americas LLC, AFFIDAVIT. 001N6043.5 Revision 2 Affidavit. **[NON-PROPRIETARY document]**
- Enclosure 4: Letter from R Stark (EPRI) to NRC, "Request for Withholding of the following Proprietary Information included in 'Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation at 106% Rated Core Flow (115 Mlbs/hr), 001N6043.5, Revision 2, PLM Specification 001N6043 Revision 5, August 2015.'"
[NON-PROPRIETARY document includes Affidavit for EPRI PROPRIETARY information included in Enclosure 1]

cc: NRC Region IV Administrator
NRC NRR Project Manager
NRC BWRVIP Project Manager
NRC Sr. Resident Inspector - 988C
CD Sonoda – BPA/1399 W/O enclosures
WA Horin - Winston & Strawn W/O enclosures

GE-Hitachi Nuclear Energy Americas LLC

AFFIDAVIT

I, **Lisa K. Schichlein**, state as follows:

- (1) I am a Senior Project Manager, Regulatory Affairs, NPP/Services Licensing, GE-Hitachi Nuclear Energy Americas LLC (GEH), and have been delegated the function of reviewing the information described in paragraph (2), which is sought to be withheld, and have been authorized to apply for its withholding.
- (2) The information sought to be withheld is contained in GEH proprietary report 001N6043.5, "Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation at 106% Rated Core Flow (115 Mlbs/hr)," Revision 2, dated August 2015. GEH proprietary information in 001N6043.5 is identified by a dotted underline inside double square brackets. [[This sentence is an example.⁽³⁾]] GEH proprietary information in figures and large objects is identified by double square brackets before and after the object. In all cases, the superscript notation ⁽³⁾ refers to Paragraph (3) of this affidavit, which provides the basis for the proprietary determination.
- (3) In making this application for withholding of proprietary information of which it is the owner or licensee, GEH relies upon the exemption from disclosure set forth in the Freedom of Information Act ("FOIA"), 5 USC Sec. 552(b)(4), and the Trade Secrets Act, 18 USC Sec. 1905, and NRC regulations 10 CFR 9.17(a)(4), and 2.390(a)(4) for "trade secrets" (Exemption 4). The material for which exemption from disclosure is here sought also qualify under the narrower definition of "trade secret", within the meanings assigned to those terms for purposes of FOIA Exemption 4 in, respectively, Critical Mass Energy Project v. Nuclear Regulatory Commission, 975 F.2d 871 (DC Cir. 1992), and Public Citizen Health Research Group v. FDA, 704 F.2d 1280 (DC Cir. 1983).
- (4) Some examples of categories of information which fit into the definition of proprietary information are:
 - a. Information that discloses a process, method, or apparatus, including supporting data and analyses, where prevention of its use by GEH's competitors without license from GEH constitutes a competitive economic advantage over other companies;
 - b. Information that, if used by a competitor, would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing of a similar product;
 - c. Information that reveals aspects of past, present, or future GEH customer-funded development plans and programs, resulting in potential products to GEH;
 - d. Information that discloses patentable subject matter for which it may be desirable to obtain patent protection.

The information sought to be withheld is considered to be proprietary for the reasons set forth in paragraphs (4)a. and (4)b. above.

- (5) To address 10 CFR 2.390(b)(4), the information sought to be withheld is being submitted to NRC in confidence. The information is of a sort customarily held in confidence by GEH, and is in fact so held. The information sought to be withheld has, to the best of my knowledge and belief, consistently been held in confidence by GEH, no public disclosure has been made, and it is not available in public sources. All disclosures to third parties, including any required transmittals to NRC, have been made, or must be made, pursuant to regulatory provisions or proprietary agreements which provide for maintenance of the information in confidence. Its initial designation as proprietary information, and the subsequent steps taken to prevent its unauthorized disclosure, are as set forth in paragraphs (6) and (7) following.
- (6) Initial approval of proprietary treatment of a document is made by the manager of the originating component, the person most likely to be acquainted with the value and sensitivity of the information in relation to industry knowledge, or subject to the terms under which it was licensed to GEH.
- (7) The procedure for approval of external release of such a document typically requires review by the staff manager, project manager, principal scientist, or other equivalent authority for technical content, competitive effect, and determination of the accuracy of the proprietary designation. Disclosures outside GEH are limited to regulatory bodies, customers, and potential customers, and their agents, suppliers, and licensees, and others with a legitimate need for the information, and then only in accordance with appropriate regulatory provisions or proprietary agreements.
- (8) The information identified in paragraph (2) is classified as proprietary because it contains data and analysis methods and techniques developed by GEH for the evaluation of jet pump riser flaws for BWRs. Development of these methods and techniques, and their application for the design, modification, and analyses methodologies and processes was achieved at a significant cost to GEH. The development of the evaluation process, along with the interpretation and application of the analytical results, is derived from the extensive experience database that constitutes a major GEH asset.
- (9) Public disclosure of the information sought to be withheld is likely to cause substantial harm to GEH's competitive position and foreclose or reduce the availability of profit-making opportunities. The information is part of GEH's comprehensive BWR safety and technology base, and its commercial value extends beyond the original development cost. The value of the technology base goes beyond the extensive physical database and analytical methodology and includes development of the expertise to determine and apply the appropriate evaluation process. In addition, the technology base includes the value derived from providing analyses done with NRC-approved methods.

The research, development, engineering, analytical and NRC review costs comprise a substantial investment of time and money by GEH.

The precise value of the expertise to devise an evaluation process and apply the correct analytical methodology is difficult to quantify, but it clearly is substantial.

GEH's competitive advantage will be lost if its competitors are able to use the results of the GEH experience to normalize or verify their own process or if they are able to claim an equivalent understanding by demonstrating that they can arrive at the same or similar conclusions.

The value of this information to GEH would be lost if the information were disclosed to the public. Making such information available to competitors without their having been required to undertake a similar expenditure of resources would unfairly provide competitors with a windfall, and deprive GEH of the opportunity to exercise its competitive advantage to seek an adequate return on its large investment in developing and obtaining these very valuable analytical tools.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on this 7th day of August 2015.



Lisa K. Schichlein
Senior Project Manager, NPP/Services Licensing
Regulatory Affairs
GE-Hitachi Nuclear Energy Americas LLC
3901 Castle Hayne Road, M/C A-65
Wilmington, NC 28401
lisa.schichlein@ge.com

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Enclosure 4

NON-PROPRIETARY

**Enclosure 4 contains Affidavit from Electric Power Research Institute (EPRI) for
EPRI PROPRIETARY information included in Enclosure 1**

Randy Stark
Director
EPRI

August 5, 2015

Document Control Desk
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Request for Withholding of the following Proprietary Information Included in:

Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation at 106% Rated Core Flow (115 Mlbs/hr), 001N6043.5, Revision 2, PLM Specification 001N6043 Revision 5, August 2015

To Whom It May Concern:

This is a request under 10 C.F.R. §2.390(a)(4) that the U.S. Nuclear Regulatory Commission ("NRC") withhold from public disclosure the report identified in the enclosed Affidavit consisting of the proprietary information owned by Electric Power Research Institute, Inc. ("EPRI") identified in the attached report. Proprietary and non-proprietary versions of the Report and the Affidavit in support of this request are enclosed.

EPRI desires to disclose the Proprietary Information in confidence to assist the NRC review of the enclosed submittal to the NRC by Energy Northwest. The Proprietary Information is not to be divulged to anyone outside of the NRC or to any of its contractors, nor shall any copies be made of the Proprietary Information provided herein. EPRI welcomes any discussions and/or questions relating to the information enclosed.

If you have any questions about the legal aspects of this request for withholding, please do not hesitate to contact me at (704) 595-2732. Questions on the content of the Report should be directed to Andy McGehee of EPRI at (704) 502-6440.

Sincerely,



AFFIDAVIT

RE: Request for Withholding of the Following Proprietary Information Included In:

Energy Northwest Columbia Generating Station Jet Pump 17/18 Riser Evaluation of 106% Rated Core Flow (115 Mlbs/hr), 001N6043.5, Revision 2, PLM Specification 001N6043 Revision 5, August 2015

I, Randy Stark, being duly sworn, depose and state as follows:

I am the Director at Electric Power Research Institute, Inc. whose principal office is located at 3420 Hillview Avenue, Palo Alto, CA. ("EPRI") and I have been specifically delegated responsibility for the above-listed report that contains EPRI Proprietary Information that is sought under this Affidavit to be withheld "Proprietary Information". I am authorized to apply to the U.S. Nuclear Regulatory Commission ("NRC") for the withholding of the Proprietary Information on behalf of EPRI.

EPRI Proprietary Information is identified in the above referenced report by a solid underline inside double square brackets. An example of such identification is as follows.

[[This sentence is an example.^(E)]]

Tables containing EPRI proprietary information are identified with double square brackets before and after the object. In each case, the superscript notation ^(E) refers to this affidavit as the basis for the proprietary determination.

EPRI requests that the Proprietary Information be withheld from the public on the following bases:

Withholding Based Upon Privileged And Confidential Trade Secrets Or Commercial Or Financial Information (see e.g., 10 C.F.R. § 2.390(a)(4)):

a. The Proprietary Information is owned by EPRI and has been held in confidence by EPRI. All entities accepting copies of the Proprietary Information do so subject to written agreements imposing an obligation upon the recipient to maintain the confidentiality of the Proprietary Information. The Proprietary Information is disclosed only to parties who agree, in writing, to preserve the confidentiality thereof.

b. EPRI considers the Proprietary Information contained therein to constitute trade secrets of EPRI. As such, EPRI holds the Information in confidence and disclosure thereof is strictly limited to individuals and entities who have agreed, in writing, to maintain the confidentiality of the Information.

c. The information sought to be withheld is considered to be proprietary for the following reasons. EPRI made a substantial economic investment to develop the Proprietary Information and, by prohibiting public disclosure, EPRI derives an economic benefit in the form of licensing royalties and other additional fees from the confidential nature of the Proprietary Information. If the Proprietary Information were publicly available to consultants and/or other businesses providing services in the electric and/or nuclear power industry, they would be able to use the Proprietary Information for their own commercial benefit and profit and without expending the substantial economic resources required of EPRI to develop the Proprietary Information.

d. EPRI's classification of the Proprietary Information as trade secrets is justified by the Uniform Trade Secrets Act which California adopted in 1984 and a version of which has been adopted by over forty states. The California Uniform Trade Secrets Act, California Civil Code §§3426 – 3426.11, 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."

e. The Proprietary Information contained therein are not generally known or available to the public. EPRI developed the Information only after making a determination that the Proprietary Information was not available from public sources. EPRI made a substantial investment of both money and employee hours in the development of the Proprietary Information. EPRI was required to devote these resources and effort to derive the Proprietary Information. As a result of such effort and cost, both in terms of dollars spent and dedicated employee time, the Proprietary Information is highly valuable to EPRI.

f. A public disclosure of the Proprietary Information would be highly likely to cause substantial harm to EPRI's competitive position and the ability of EPRI to license the Proprietary Information both domestically and internationally. The Proprietary Information can only be acquired and/or duplicated by others using an equivalent investment of time and effort.

I have read the foregoing and the matters stated herein 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 3420 Hillview Avenue, Palo Alto, CA being the premises and place of business of Electric Power Research Institute, Inc.

Date: August 5, 2015

Randy Stark
Randy Stark

Civil Code 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

(State of California)

(County of Santa Clara)

Subscribed and sworn to (or affirmed) before me on this 5th day of August, 2015 by Berke Stahl, proved to me on the basis of satisfactory evidence to be the person(s) who appeared before me.

Signature Berke Stahl (Seal)

My Commission Expires 20 day of March, 2019

