



December 15, 2016
NRC:16:035

Ms. Kerri Kavanagh
U.S. Nuclear Regulatory Commission
Chief, Quality Assurance Vendor Inspection Branch 3
Office of New Reactors
11555 Rockville Pike
Rockville, MD 20852

NRC Request for Information on AREVA Creusot Forge Forgings in U.S. Components and Carbon Segregation Issues

- Ref. 1: Email, Ms. Kerri Kavanagh (NRC) to Mr. Victor Montalbano (AREVA NP Inc.), "NRC request for documentation associated with US components manufactured at Creusot Forge," November 30, 2016.
- Ref. 2: Letter, Mr. Gary Peters (AREVA NP Inc.) to Ms. Kerri Kavanagh (NRC), "NRC Request for Information on AREVA Creusot Forge," NRC:16:032, December 2, 2016.
- Ref. 3: Letter, Mr. Gary Peters (AREVA NP Inc.) to Ms. Kerri Kavanagh (NRC), "NRC Request for Information on AREVA Creusot Forge," NRC:16:034, December 7, 2016.
- Ref. 4: Email, Ms. Kerri Kavanagh (NRC) to Mr. Victor Montalbano (AREVA NP Inc.) and Mr. Gary Peters (AREVA NP Inc.), "Question on Creusot Forge Carbon Segregation Issue, December 12, 2016.

NRC requested information related to U.S. components manufactured at AREVA Creusot Forge in Reference 1. Specifically, the Root Cause evaluation associated with document irregularities and copies of all AREVA NP Lynchburg to AREVA France (Creusot Forge) contracts/purchase orders for delivered U.S. components. The requested information was provided to the NRC in References 2 and 3.

During a phone call on December 7, 2016, NRC requested a listing of all forgings provided by Creusot Forge that are in U.S. components. This list is provided in Attachment A to this letter.

NRC requested information regarding carbon segregation issues associated with Creusot Forge in Reference 4. A response to your requested information is provided in Attachment B to this letter.

AREVA NP considers the information contained in the attachments to this letter to be proprietary in full. As required by 10 CFR 2.390(b), an affidavit is enclosed to support the withholding of the information from public disclosure.

AREVA INC.

If you have any questions related to this information, please contact Victor Montalbano by telephone at (434) 832-3368 or by email at Victor.Montalbano@areva.com. You may also contact me by telephone at (434) 832-3945, or by e-mail at Gary.Peters@areva.com.

Sincerely,

A large, stylized handwritten signature in black ink, appearing to read 'Gary Peters', is written over the typed name and title.

Gary Peters, Director
Licensing & Regulatory Affairs
AREVA NP Inc.

cc: J. G. Rowley – w/o Att.
Project 728

Enclosures:

1. Attachment 1 - Creusot Forge Forgings in U.S. Components
2. Attachment 2 – Response to Carbon Segregation Issues
3. Affidavit

ATTACHMENT A

Creusot Forge Forgings in U.S. Components

13-Dec-16

Customer	Site	Prime	Fabricator	Forgings
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Steam Generators

FENOC	Beaver Valley 1	WH	ENSA	3 primary heads, 3 tubesheets, 3 conical shells, 3 elliptical heads
Luminant	Comanche Peak 1	WH	ENSA	3 primary heads, 3 tubesheets, 3 elliptical heads
Scana	VC Summer	WH	WH	4 primary heads, 4 tubesheets
Southern	Farley 1 & 2	WH	ENSA	3 tubesheets, 9 lower shells, 9 upper shells
STP	South Texas 1	WH	ENSA	4 conical shells
STP	South Texas 2	WH	ENSA	4 tubesheets
TVA	Sequoyah 1	WH	Doosan	4 primary heads, 4 conical shells, 6 lower shells, 6 upper shells, 4 elliptical heads
TVA	Watts Bar 1	WH	Doosan	4 primary heads, 4 lower shells, 4 upper shells, 4 elliptical heads

Reactor Vessel Heads

Entergy	ANO 2	WH	Doosan	1 monoblock
Dominion	North Anna 1	INC	St Marcel	1 RVCH closure head flange
Dominion	North Anna 2	INC	St Marcel	1 RVCH closure head flange
Dominion	Surry1	INC	St Marcel	1 RVCH closure head flange
FENOC	Beaver Valley 1	WH	ENSA	1 monoblock

Pressurizers

Dominion	Millstone 2	INC	St. Marcel	Upper and lower shells, upper and lower heads (Note 1)
NextEra	St. Lucie 1	INC	St. Marcel	Upper and lower shells, upper and lower heads (Note 1)

Reactor Vessels

Westinghouse	WH OPS & OQS (173" RPV) (Note 2)	WH	Creusot Loire	2 transition rings, 4 core shells, 2 RPV flange + 2 nozzle shells + 12 nozzles and 2 RVCH flanges
Xcel Energy	Prairie Island 1 & 2 (NSP & NRP) (132" RPV)	WH	WH	2 transition rings, 4 core shells, 2 RPV flanges + 2 nozzle shells + 8 nozzles and 2 RVCH flanges

CF = Creusot Forge
INC = AREVA Inc.
WH = Westinghouse

Creusot Loire is a previous owner of Creusot Forge

Note 1: CF subcontracted upper and lower heads to be hot formed at Euroform from Industeel ingot. Machined, quenched, tempered and final machined at CF.
Note 2: OPS is Puerto Rico project. To our knowledge no project name was assigned for OQS.

Attachment B

Proprietary

NRC Request for Additional Information: Are the SG channel heads in the U.S. Fleet from Creusot Forge manufactured from an ingot with controlled solidification (or similar process)? If not, what process was used and is there reason to suspect high levels of carbon in these components?

Response:

Many of the SG channel heads in the U.S. fleet by Creusot Forge were manufactured by hot forming of a forged blank from a conventional ingot and some from LSD (directed solidification) ingots.

AREVA is in the process of reviewing documents to confirm which channel heads in the U.S. fleet were formed from each type of ingot. This activity will be complete in another three to four weeks, at which time we can provide you a precise answer.

is requested qualifies under 10 CFR 2.390(a)(4) "Trade secrets and commercial or financial information."

6. The following criteria are customarily applied by AREVA NP to determine whether information should be classified as proprietary:

- (a) The information reveals details of AREVA NP's research and development plans and programs or their results.
- (b) Use of the information by a competitor would permit the competitor to significantly reduce its expenditures, in time or resources, to design, produce, or market a similar product or service.
- (c) The information includes test data or analytical techniques concerning a process, methodology, or component, the application of which results in a competitive advantage for AREVA NP.
- (d) The information reveals certain distinguishing aspects of a process, methodology, or component, the exclusive use of which provides a competitive advantage for AREVA NP in product optimization or marketability.
- (e) The information is vital to a competitive advantage held by AREVA NP, would be helpful to competitors to AREVA NP, and would likely cause substantial harm to the competitive position of AREVA NP.

The information in these Documents is considered proprietary for the reasons set forth in paragraphs 6(c), 6(d) and 6(e) above.

7. In accordance with AREVA NP's policies governing the protection and control of information, proprietary information contained in these Documents has been made available, on a limited basis, to others outside AREVA NP only as required and under suitable agreement providing for nondisclosure and limited use of the information.

8. AREVA NP policy requires that proprietary information be kept in a secured file or area and distributed on a need-to-know basis.

9. The foregoing statements are true and correct to the best of my knowledge, information, and belief.

A large, stylized handwritten signature in black ink, written over a horizontal line. The signature is cursive and appears to be the name of the person being subscribed to.

SUBSCRIBED before me this 15th
day of December, 2016.

A handwritten signature in black ink, written over a horizontal line. The signature is cursive and appears to be the name of the notary public, Sherry L. McFaden.

Sherry L. McFaden
NOTARY PUBLIC, COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES: 10/31/18
Reg. # 7079129

