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From: Rosenberg, Stacey *NR*
Sent: Wednesday, August 15, 2012 8:49 AM
To: Hiland, Patrick
Cc: Fairbanks, Carolyn; Cheok, Michael; Hardies, Robert; Poehler, Jeffrey
Subject: RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Yes, I agree. I will provide you with a lead POC tomorrow (Thursday).

From: Hiland, Patrick *NR*
Sent: Tuesday, August 14, 2012 8:56 AM
To: Rosenberg, Stacey
Cc: Fairbanks, Carolyn; Cheok, Michael; Hardies, Robert; Poehler, Jeffrey
Subject: FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Stacey, I need someone to follow these types of insights. Hardies can participate, but I believe this task should be lead by your branch?

From: Ring, Mark *NR*
Sent: Tuesday, August 14, 2012 8:41 AM
To: Shear, Gary; Hiland, Patrick
Cc: Giessner, John; Rierner, Kenneth; Cameron, Jamnes; Casto, Chuck; Kunowski, Michael; Lara, Julio; Duncan, Eric
Subject: RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Gary and Pat,

My info from the FSAR by way of the SRI and the licensee is a little different. This indicates that the Quad U2 bottom head assembly of the vessel was "made" by Rotterdam (see below).

According to the licensee the affected unit is Unit 2. The following discussion comes from the Section 5.3.2 of the USFSAR:

The Quad Cities Unit 1 RPV was fabricated entirely in the United States by Babcock & Wilcox (B&W). The Unit 2 RPV was fabricated by several different vendors, including one in Holland, as noted in the following paragraphs. [5.3-2]

Fabrication work on the Unit 2 bottom head assembly and lower shell course was performed by the Rotterdam Dockyard Company (RDM) in Rotterdam, Holland. These two pieces were seam-welded together and returned to the United States as a fully completed subassembly including control rod drive (CRD) stub tubes, shroud support skirt, and vessel support skirt.

The UFSAR quote below is from Section 5.3.1.2. It goes on to say

Chicago Bridge and Iron (CB&I), which completed fabrication of the Unit 2 RPV prior to its shipment to the plant site, provided a certification comparable to the ASME Code N-1A form. The following footnote was included in that certification: [5.3-3]

"This unstamped vessel was built as a 'State Special' based on agreements between the State of Illinois and Commonwealth Edison Company. A portion of the vessel was fabricated by Rotterdam Dockyard Company. This vessel was not stamped because Rotterdam Dockyard Company does not hold an ASME

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certificate of authorization. Procedures equivalent to the requirements of the ASME Code were used."

SRI: "For Unit 2, according to the licensee, the component steel was fabricated in the US by Babcock & Wilcox. These were sent to RDM where they were "bent" to shape and welded together. Final assembly of the vessel was performed in the US. Without looking further, I can't determine if the beltline region was included in the RDM work.

As far as inspection, they only look at the seam welds. According to the ISI guys, the only other inspection they ever did after initial construction was a VT3 on the inner clad surface and that was stopped after it was determined to have no value.

They (licensee) had the initial communication on the issue and are currently waiting for more specific information from the utility before determining what they need to do. The sites understanding is that the components in question at the Belgian facility were manufactured in total at the RDM facility as opposed to being assembled there as was Unit 2. Will follow up as more information comes available."

We communicated this info to Dave Hills and our ISI guys yesterday.

-Mark

From: Shear, Gary
Sent: Tuesday, August 14, 2012 6:04 AM
To: Ring, Mark
Cc: Giessner, John; Riemer, Kenneth; Cameron, Jamnes; Casto, Chuck; Kunowski, Michael; Lara, Julio; Duncan, Eric
Subject: FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

fyi

From: Hiland, Patrick
Sent: Monday, August 13, 2012 3:15 PM
To: McIntyre, David; Burnell, Scott
Cc: Wert, Leonard; Howell, Art; Pederson, Cynthia; Lew, David; Brown, Frederick; Ogle, Chuck; Roberts, Darrell; Miller, Chris; Reis, Terrence; Croteau, Rick; Ogle, Chuck; Munday, Joel; Reynolds, Steven; Shear, Gary; OBrien, Kenneth; Kennedy, Kriss; Vogel, Anton; Blount, Tom; Howe, Allen; Dorman, Dan; Boger, Bruce; Cheok, Michael; Hardies, Robert; Poehler, Jeffrey; Evans, Michele
Subject: FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

David/Scott, we've confirmed through DORL's direct conversations with licensees that 10 U.S. reactor vessels were manufactured at Rotterdam. Note that our list contains one plant not on the Belgium list (Watts Bar -2) and identification that contrary to the Belgium list, Quad Cities 1 was not manufactured by Rotterdam (see note).

Site/Unit(s)	Question: Were RPV(s) forged by Rotterdam Droogdok Maatschappij	Comments
Catawba 1	Yes	
Fermi 2	No	
McGuire 2	Yes	
North Anna 1	Yes	
North Anna 2	Yes	
Quad Cities 1	No	According to the attached Quad Cities UFSAR Section 5.3.1.2 and Manufacturing History, the Quad Cities, Unit 1 RPV was manufactured entirely by Babcock & Wilcox. The Unit 2 RPV

		history did not include any forging at Rotterdam (RDM), but did include assembly and welding on portions of the RPV at RDM.
Sequoyah 1&2	Yes	Section 5.4.2, first sentence (Page 5.4-2), of the SQN UFSAR states that "The reactor vessel manufactured by DeRotterdam Dredgdak Mattschappu N.V. (The Rotterdam Dockyard Company) is cylindrical with a welded hemispherical bottom head and a removable, bolted flanged and gasketed, hemispherical upper head." So, to answer your question, Yes, the Sequoyah Units 1 and 2 reactor vessels are forged by Rotterdam Dockyards.
Surry 1	Yes	
Surry 2	Yes	
Watts Bar 1&2	Yes	