

Poehler, Jeffrey

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From: Hopkins, Jon
Sent: Thursday, August 16, 2012 9:01 AM
To: Poehler, Jeffrey
Subject: RE: QUESTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Jeff, Thanks for the info. Please keep me informed as we find out more. Thx, Jon

From: Poehler, Jeffrey
Sent: Thursday, August 16, 2012 9:00 AM
To: Hopkins, Jon
Cc: Fairbanks, Carolyn; Rosenberg, Stacey
Subject: RE: QUESTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

I cannot find the plate manufacturer in any of the references I have. However, according to the Surry FSAR, the major subassemblies that are made from plates (intermediate and lower shells) were already in existence before the vessel was transferred to RDM for completion. Specifically, for Surry 1, the intermediate shell was already welded to the lower shell before being sent to RDM. For Surry 2, the intermediate shell and lower shell were formed and welded but not welded before being transferred to RDM. These intermediate and lower shells were fabricated from two plates each. From this I infer that the plates were of US manufacture.

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From: Hopkins, Jon
Sent: Wednesday, August 15, 2012 10:10 AM
To: Poehler, Jeffrey
Cc: Cheok, Michael; Hiland, Patrick
Subject: QUESTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Jeff,

For Surry 1 and 2, did RDM make the plate for the RPVs or did it just weld together the plates supplied by someone else?

Thank you, Jon

From: Poehler, Jeffrey
Sent: Monday, August 13, 2012 4:00 PM
To: Hardies, Robert; Fairbanks, Carolyn
Subject: RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Watts Bar 2 hasn't operated yet...but may soon. Surry 1 and 2 were welded by Rotterdam but of plate not forgings.

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From: Hardies, Robert
Sent: Monday, August 13, 2012 3:58 PM
To: Poehler, Jeffrey; Fairbanks, Carolyn
Subject: FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Mystery solved. The numbers work out now. But which is the plant that has never operated....or s that one not on this list?

From: Hopkins, Jon
Sent: Monday, August 13, 2012 3:52 PM
To: Hiland, Patrick
Cc: Cheok, Michael; Hardies, Robert
Subject: FW: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Pat,

Verification from DORL of U.S. NPPs with RDM reactor pressure vessels is below. Yes except for the BWRs, Fermi & Quad, No.

Jon

From: Meighan, Sean
Sent: Monday, August 13, 2012 3:47 PM
To: Roque-Cruz, Carla; Hopkins, Jon
Cc: Thompson, Jon; Sreenivas, V; Mozafari, Brenda; Lingam, Silva; Cotton, Karen; Poole, Justin; Chawla, Mahesh; Boska, John; Quichocho, Jessie; Dudek, Michael; Guzman, Richard; Martin, Robert; Frankl, Istvan; Coffin, Stephanie; Evans, Michele
Subject: RE: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Jon:

Below is the requested info re: RPVs forged by Rotterdam Dockyards (RDM).

With this e-mail I consider the question to be answered. If you need further info, please send e-mail to me and cc: Michele Evans.

V/R
s

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	

		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 Drodgdak 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	

From: Meighan, Sean

Sent: Monday, August 13, 2012 10:57 AM

To: Thompson, Jon; Sreenivas, V; Mozafari, Brenda; Lingam, Siva; Cotton, Karen; Poole, Justin; Chawla, Mahesh

Cc: Boska, John; Quichocho, Jessie; Dudek, Michael; Guzman, Richard; Martin, Robert; Frankl, Istvan; Coffin, Stephanie; Evans, Michele

Subject: ACTION: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

PMs:

(Tasking from Michele Evans)

Please read below and attached.

Action: Ask the licensees of the units below to verify if their units Reactor Pressure Vessel(s) were forged by Rotterdam Droogdok Maatschappij (also referred to as Rotterdam Dockyards or RDM). The RPV forgings may have been welded together by another company such as B&W. *NRC is interested in who forged the parts*

Due to the quick turn around requested and the evolving nature of the issue, we suggest you call your licensing contact, discuss the issue and get a call back with the answer. We understand the licensee would like some context with the question, feel free to send attached to the licensee. We actually suspect this issue is already on their radar screen.

Due: COB today.

Any questions, just call me.

BCs – if the primary PM for the site is out today, forward to the backup PM.

FYI, this tasking does not violate the Paperwork Reduction Act due to small number of (<10) requested responders.

Catawba 1	PWR	4	1129	1985	West
Ferri 2					
McGuire 2	PWR	4	1100	1983	West
North Anna 1	PWR	3	903	1978	West
North Anna 2	PWR	3	973	1980	West
Quad Cities 1	BWR	-	882	1972	Gene
Sequoyah 1	PWR	4	1162	1980	West
Sequoyah 2	PWR	4	1126	1981	West
Surry 1	PWR	3	839	1972	West
Surry 2	PWR	3	800	1973	West
Watts Bar 1	PWR	4	1123	1996	West
Watts Bar 2	PWR				West

From: Hopkins, Jon

Sent: Monday, August 13, 2012 10:06 AM

To: Meighan, Sean

Subject: REQUEST: Followup of list of NPPs with RPVs forged by Rotterdam Dockyards (RDM)

Sean,

Question for PMs to ask licensees is; Was your plants' RPV forged by RDM (Rotterdam Dockyards) ?

The RPV forgings may have been welded together by another company such as B&W. NRC is interested in who forged the parts.

NRC is interested because the of UT Indications recently found on the RPV forgings at Doel 3 NPP in Belgium. The Doel 3 licensee, Electrabel, provided the below table of NPPs with RPVs forged by Rotterdam Dockyards (Only Belgium and U.S. included in this email. There are additional plants/countries). This is preliminary information the accuracy of which the NRC wants to confirm for U.S. NPPs.

Reactor Pressure Vessels forged by Rotterdam Droogdok Maatschappij (also referred to as Rotterdam Dockyards or RDM)

- o The Doel 3 and Tihange 2 RPVs were forged by RDM, which according to the Licensee Electrabel provided some 20+ vessels in Europe and the US.
- o The table below gives an overview of these RPVs (this list has been established by the licensee and could contain errors or omissions).

Doel 3	PWR	3	1000	1982	Fr
Tihange 2	PWR	3	1000	1982	Fr

Catawba 1	PWR	4	1129	1985	W
Ferri 2					
McGuire 2	PWR	4	1100	1983	W
North Anna 1	PWR	3	903	1978	W
North Anna 2	PWR	3	973	1980	W
Quad Cities 1	BWR	-	882	1972	G
Sequoyah 1	PWR	4	1162	1980	W
Sequoyah 2	PWR	4	1126	1981	W
Surry 1	PWR	3	839	1972	W
Surry 2	PWR	3	800	1973	W
Watts Bar 1	PWR	4	1123	1996	W
Watts Bar 2	PWR				W