

Poehler, Jeffrey

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**From:** Poehler, Jeffrey W. (JL)  
**Sent:** Monday, August 13, 2012 4:33 PM  
**To:** Fairbanks, Carolyn  
**Subject:** DOEL 3 Issue - List of Plants with Forgings Manufactured by Rotterdam

Carla, in response to the action from last Friday's briefing to confirm the list of plants:

Carolyn – status of what we know so far....

EVIB investigated available information to determine which plants have reactor vessels fabricated by Rotterdam Dockyards, and which of these reactor vessels are fabricated entirely from forgings.

The main source of information is the Reactor Vessel Integrity Database (RVID). The information in this database is from licensee submittals in response to Generic Letter 92-01, "Reactor Vessel Structural Integrity," Rev. 1, and Generic Letter 92-01, Supplement 1. When the database was initially published, the staff requested each licensee to verify the contents of the database were correct for their plants. This was done for each revision of the database – the most recent revision is Revision 2. The staff also referred to NUREG-1511, "Reactor Pressure Vessel Status Report," December 1994, and NUREG-1511, Supplement 2, "Reactor Pressure Vessel Status Report," October 2000.

Summary – Seven US operating reactors have RV's fabricated primarily of forgings and the RV was assembled (welded) by Rotterdam Dockyards.

One US reactor that has never operated has an RVs fabricated primarily of forgings for which the RV was assembled (welded) by Rotterdam Dockyards

Two US reactors have vessels not primarily fabricated of forgings for which some of the vessel welds were made by Rotterdam Dockyards.

One US reactor has a vessel not primarily fabricated of forgings for which some of the vessel welds may have been made by Rotterdam Dockyards (conflicting information).

The following U.S. plants have reactor vessels fabricated primarily from forgings that were also assembled (welded together) by Rotterdam Dockyards:

- Catawba 1
- North Anna 1
- North Anna 2
- Sequoyah 1
- Sequoyah 2
- McGuire 2
- Watts Bar 1

The following U.S plants have reactor vessels with some welds made by Rotterdam Dockyards, but the vessels are primarily fabricated from plate:

- Surry 1
- Surry 2

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Surry Units 1 and 2, were partially assembled by Rotterdam Dockyards, but the beltline portion of the vessel was manufactured from welded plates, not forgings. Some of the vessel welds were done by Rotterdam. The Surry 1 and Surry 2 reactor vessels do have a "nozzle shell forging" – but the information we have does not indicate the manufacturer for the "nozzle shell forging."

NUREG-1511 indicates that the Quad Cities, Unit 2 RV was partially manufactured by Rotterdam Dockyards. NUREG-1511, Supplement 2 further elaborates that for Quad Cities Unit 2, the axial welds within each shell course were fabricated by Babcock & Wilcox, and the circumferential welds were fabricated by Chicago Bridge & Iron. Therefore, it is not clear if the Quad Cities, Unit 2 RV was fabricated by Rotterdam Dockyards or to what extent.

For Quad Cities 1, the reactor vessel is fabricated from plates. NUREG-1511 lists the vessel manufacturer as Babcock & Wilcox.

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