

From: Hilland, Patrick
Sent: Monday, August 27, 2012 3:42 PM
To: Case, Michael
Cc: Richards, Stuart; Fairbanks, Carolyn; Rosenberg, Stacey; Cheok, Michael; Hardles, Robert; Dorman, Dan; Boger, Bruce; Evans, Michele
Subject: Research Assistance Request

The Office of Nuclear Reactor Regulation (NRR), Division of Engineering is requesting that the Office of Nuclear Regulatory Research (RES), Division of Engineering provide research assistance to assess the implications of the indications discovered in the Doel 3 reactor pressure vessel forgings to domestic reactor pressure vessel forgings. Specifically, NRR is requesting technical assistance in the areas of nondestructive examination (NDE) and deterministic and probabilistic fracture mechanics

In the area of NDE, NRR request technical expertise to assess the procedures, techniques, equipment, standards, qualifications, inspections, acceptance criteria and other relevant NDE variables used to examine the Doel 3 reactor pressure vessel forgings. This assistance may include contact with the licensee (Doel 3), the Belgian nuclear regulatory authority and possibly contractors. Travel to Belgium may also be necessary.

In the area of fracture mechanics, NRR requests assistance to support the Belgian regulator, FANC. FANC has requested the participation of Dr. Mark Kirk in an expert peer review panel. The peer review panel would assist the regulator in assessing the deterministic and probabilistic fracture mechanics analyses being prepared by the licensee for Doel 3. Telephone, video conference, and in-person meetings in Belgium would likely be necessary for this effort.

Also in the area of fracture mechanics, NRR requests assistance to perform analyses related to the implications of similar indications (to Doel 3) in domestic reactor pressure vessel forgings. This effort is currently less well defined. The industry has proposed performing both deterministic and probabilistic fracture mechanics analyses of generic reactor pressure vessel forgings with indications similar to those discovered in Doel 3. If the industry performs these analyses, RES would perform confirmatory analyses. In the event that industry did not perform analyses of hypothetically flawed vessels, this request would be for RES to perform research to verify the adequacy of current ASME Section III acceptance criteria for (b)(4) by performing appropriate deterministic or probabilistic fracture mechanics analyses.

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