From: "Robert L Gill Jr" <rlgill@duke-energy.com>
To: <RLF2@nrc.gov>
Date: 6/19/02 7:06AM
Subject: Re: RV Internals Inspection RAI B3.27-1 - Supplemental

Rani,
This is in reply to Jim Medoff's note to me.

RAI B.3.27-1 only concerned void swelling and that was what I thought the concern was.

Recall that Duke credits the Reactor Vessel Internals Inspection, Chemistry Control Program and Inservice Inspection Plan to manage the aging of the RV Internals. In addition, the Alloy 600 Aging Management Review applies to certain locations. (See table 3.1-1 pages 3.1-14 to 3.1-20)

With respect to cracking, Duke has committed to inspect McGuire Unit 1 for cracking and reduction of fracture toughness (see page B.3.27-2 of the Application) and to use these inspection results (as well as those from Oconee) to decide about inspections on McGuire 2 and Catawba Units 1 and 2. The forgings, welds and other bolting materials are the same for these three units. McGuire 1 will be the leading indicator for indications of radiation induced aging effects as it has the highest fluence.

Loss of material (and cracking) will be managed by Chemistry Control Program and Inservice Inspection Plan.

Also note that Duke has committed to perform inspections of reactor vessel internals in four of its seven nuclear units, more than any other utility else thus far. Given the timing of when the McGuire Unit 2 and the Catawba Units enter the period of extended operation - 2023 to 2026 - many RV internals inspections will be completed within the US nuclear industry and will provide data that can permit an informed decision regarding the need for future RV internals inspections.

We can discuss further if necessary.

Bob

"James Medoff" <JXM@nrc.gov>
06/18/2002 02:10 PM

To: <rlgill@duke-energy.com>
cc:
bcc:
Subject: Re: RV Internals Inspection RAI B3.27-1 - Supplemental

Void swelling is only one issue. What about loss of material and cracking.
Jim

>>> "Robert L Gill Jr" <rlgill@duke-energy.com> 06/18/02 01:26PM >>>
Rani,
Per our discussion today, Duke understands that the staff wants the technical justification for using the results of the Oconee inspections for dimensional changes due to void swelling to establish such inspections on plates, forgings, welds and bolting other than baffle bolting.

Baffle bolting, formers, and baffle plates are the leading locations for dimensional changes due to void swelling because of the higher fluence levels and temperatures. Information comparing Oconee, McGuire and Catawba was provided in our response to RAI B.3.27-1

Forgings are made of Type 304 stainless steel (all seven units). However, the forgings are located in lower fluence areas and are not susceptible to void swelling.

Welds are Type 308 stainless steel (all seven units). The welds are also located in regions of relatively low fluence and not susceptible to void swelling.

Bolting other than baffle bolting is Type 316 cold worked (Oconee has Type 304 bolting). This bolting is also located in regions of relatively low fluence and not susceptible to void swelling.

Therefore, Duke has concluded that the results of the Oconee inspections and the McGuire Unit 1 inspection will be applicable and bound McGuire 2, Catawba 1 and 2 internals.
Bob

CC: "Jeff D Gilreath" <jdgilreath@duke-energy.com>