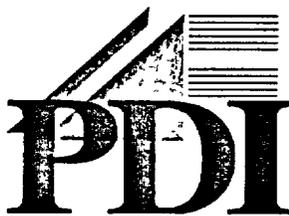


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March 18, 2003

Don Naujock
US NRC
OWFN-7D4
11555 Rockville Pike
Rockville, MD 20852

SUBJECT: Review of ASME Code, Section XI, Appendix VIII, 2001 edition, 2002 Addenda

Dear Don:

Please consider the following comments regarding your review of the subject Code requirements. The attached comments have been prepared by Larry Becker at the EPRI NDE Center.

We hope that you will agree with us that the scarce resources available to us could be better applied to performing quality examinations in accordance with the Appendix VIII qualified procedures.

Sincerely,

Signature on File

Randy T. Linden
PDI Steering Committee Chairmen

Cc: Terrance Chan
Frank Ammirato
Larry Becker
Carl Latiolais
Mike Gothard

Correspondence to the PDI Committee should be directed to:
Randy T. Linden • PPL, Susquehanna, LLC • 769 Salem Blvd • Berwick, PA 18603

Comments:

In regard to your questions regarding the subject Code I have collected some information concerning the two questions which you proposed in your phone call of Tuesday March 11, 2003. As I understand your questions they were as follows:

1. What is the justification for the statement in VIII-4100, 2002 Addenda, that "Components of the same manufacturer, and model or series, are substitutable without further consideration."
2. What is the justification for the statements in supplements 4 and 6, "Flaws smaller than the allowable flaw size as defined in IWB-3500, need not be included as detection flaws."

In Response to Question 1

It was never the intent of the ASME Code that each and every component be characterized. The requirements of VIII-4100 were intended only for the cases where components of a different manufacture, make or model were intended to replace the qualified manufacture make or model. The difference between exchange and replace is defined succinctly in Ref. (1) as follows:

Exchange= To use one of the same property as the qualified NDT –system.

For example, if an NDT instrument is specified by the make (manufacturer) model and type number in the qualified NDT system then any instrument of the same make, model and type number can be used with the qualified NDT-system.

Replace= to use a property of a similar type as the qualified NDT system.

For example, if an NDT instrument is specified by the make (manufacture), model and type number in the qualified NDT system and an alternative is proposed where any of the following, make (manufacture), model and type number is different the essential variable is considered to be replaced.

The SQC requirements (1) the PWR Steam Generator Examination Guidelines (2) and Appendix VIII (3) all take a similar approach regarding exchanges and replacements:

An exchange requires that the identity of the component be established through documentation and that a system calibration is required to establish that the system is operating in the same manner as when it was qualified a normal system calibration before and after the examination is sufficient.

A replacement requires either a new qualification be performed or the exchanged component or the system as a whole can be characterized to demonstrate that the new component is performing within defined limits of the original system configuration.

Each of the three international consensus standards relies on the OEM manufacturing tolerances and the 10CFR Appendix B or similar national standard quality assurance programs to control measuring and test equipment operability and repeatability. In the case of exchanges that is all that is required. In the case of replacements additional requirements are placed on the replacement items that are more stringent than normal OEM tolerances.

In summary we accept the standard OEM tolerance and variability controlled by our quality assurance program. In addition there has been no data that suggest exchanged units have failed or could fail to perform the task for which they were qualified.

In Response to Question 2

Originally four flaw size ranges were specified in Supplements 4 and 6. These are fixed values without regard to the component thickness. In some cases this would result in very small flaws (less than IWB-3500 requirements) on the outside surface of a large component. The ASME CODE Section XI has established that flaws less than IWB-3500 are of no concern regarding the serviceability of the components over their lifetime. The Code based the detection flaw size requirements on the following:

1. There is no requirement to detect or evaluate flaws less than IWB-3500.
2. Discrimination of acceptable from non-acceptable flaws is established by the sizing criterion, which does include flaws less than IWB-3500.
3. Sizing performance data demonstrates that the flaws near the low end of the flaw size range are oversized thus further contributing to the conservatism of the IWB-3500 acceptance tables.
4. The concern that the qualification covers a range of component thicknesses is addressed for inside surface examination by establishing the limit based on the smallest thickness addressed by the procedure. For examination from the outside surface the thickness of the demonstration component is prescribed.
5. Detectability of flaws at the examination surface is not affected by the thickness of the component. The full range of flaw sizes are demonstrated for the flaws closest to the examination surface.

We believe that the requirements in the 2002 Addenda are correct and meet the intent of the performance demonstration process.

I hope this will provide you with the information you require for your review of the current Code requirements.

References:

1. Guidelines on the Management of NDT-System Essential Variables Subject to the Qualification Requirements of the Swedish Nuclear Power industry, SQC Guideline 1, rev A, October, 2000, SQC Kvalificeringscentrum AB, Taby Sweden, pp20-21, available at www.sqc.se
2. Pressurized Water Reactor Steam Generator Examination Guidelines: 6, EPRI Technical Report 1003138, October 2002, pp j-8 through j-11.
3. ASME Boiler and Pressure Vessel Code, Section XI Div.1, Appendix VIII, 2001 Edition and 2002 Addenda.

Prepared by:

F.L. Becker
PDI Program Manager