Meeting Report: **IIW Commission V (NDT and Quality Assurance)**
Held At: **Graz, Austria**
Date: **July 7 – 9, 2008**
Chair: **Gerd Dobmann**

1. The meeting opened at 9:00.

   There were 23 delegates and experts in attendance. Countries represented: Austria, Canada, Czech, France, Finland, Germany, Hungary, India, Russia, Sweden, Slovenia, Pakistan, South Korea, and Tunisia.

2. Chair

   Gerd Dobmann is at the end of his 3rd term as chair. It was proposed that Phillipe Benoist take over as chair. This was agreed to by the delegates to Commission V.

   Mr. Benoist works for CEA, the French Atomic Energy Commission and was elected chair for a 3 year term.

3. Update from IIW Secretariat

   Andre Charbonnier, CEO of the IIW, provided an update on the upcoming new IIW website and publication guidelines for Welding in the World.

4. Research Paper: Non-destructive microstructure characterization of materials states after thermal ageing, fatigue loads and neutron irradiation

   Mr. Dobmann presented his paper on R&D of aging phenomenon. This will be presented at the Safety and Reliability of Welded Components in Energy and Processing Industry Conference following the IIW Annual Assembly.

   Reference IIW Document V-1406-08.

5. Report of Sub-Commission VA (RT based weld inspection)

   Uwe Ewert provided an update on the activities of sub-commission VA

~~~ Day 1 ends 13:05 ~~~

6. Report of Sub-Commission VC (UT based weld inspection)

   Eric Sjerve provided an update on the work of the sub-commission. The main work of the committee was writing the handbook for phased arrays. A draft version (rev 6) is now complete and has been sent out to 4 external editors – NIST, BAM, CEA.

   The handbook on UT of austenitic and dissimilar welds is complete.

   Michael Moles provided an overview of the Phased Array Handbook, which is geared towards senior NDT technicians.

   Overview of chapters (taken from Chapter 1 of the handbook):

   - Chapter 2 covers Phased Array Principles and Design; it describes the basic physics required for an understanding of phased arrays, how arrays are manufactured, and some inherent limitations.
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- Chapter 3 covers Scanning Patterns and Ultrasonic Views; it shows all of the basic scan patterns used for data acquisition, plus some advanced and exotic scans primarily of academic interest. Many different combinations of common data views are also described, with the addition of some less common special views. In addition, this chapter includes a mention of Time-Of-Flight Diffraction, which is complementary to pulse echo phased arrays.

- Chapter 4 covers Codes and Calibration; it is an update of phased array code developments, plus indications of future trends with codes. Calibration of phased arrays is also described, as it specifically relates to code inspections.

- Chapter 5 covers Modeling and Imaging; it describes four different levels of computer modeling to optimize inspections, starting at a basic geometric model and going to a full Gaussian propagation model. The latest methods of data plotting showing 3D defect data superimposed on the component being inspected are also covered.

- Chapter 6 covers Construction Weld Inspections; this chapter is a series of application specific descriptions for components like pipelines, process piping, pressure vessels, butt welds, T-welds, ERW pipe, superaustentics and friction stir welds. These are highly regulated inspections, and the examples show how phased arrays fulfill the code requirements.

- Chapter 7 covers In-Service Weld Inspections; this chapter is a series of application specific descriptions for welds for detecting in-service defects in heavy walled reactors, core shrouds, environmental cracking and transverse defects. These inspections tend to be much less regulated than construction welding, so imaginative use of phased arrays is possible.

- Chapter 8 covers Non-Weld Inspections; this chapter is a series of application specific descriptions that demonstrate how phased arrays can be applied to non-weld applications, such as railway wheels and axles, bridge pins, turbines, fasteners, and thickness measurements.

- Chapter 9 is a Summary.

- A Glossary is also included.

It was agreed to move ahead with publishing following the editorial review.

Mr. Moles presented a request for IIW sub-group to develop Phased Array Calibration Block. A review of calibration blocks which are available in industry was done.

The recommendation was to set up a sub group to design a standard PA calibration block(s). It was agreed to form a working group.

~~ Day 2 ends 11:27 ~~

Note: July 9, 2008 meeting not attended due to conflict with SC- QUAL

J. Craig Martin
July 8, 2008