November 5, 2007

MEMORANDUM TO: Terence L. Chan, Chief
Piping and NDE Branch
Division of Component Integrity
Office of Nuclear Reactor Regulations

FROM: Donald G. Naujock, Materials Engineer ***/RA/***
Piping and NDE Branch
Division of Component Integrity
Office Of Nuclear Reactor Regulations

SUBJECT: SUMMARY OF MEETING HELD JULY 24 & 25, 2007
WITH THE ELECTRIC POWER RESEARCH INSTITUTE
PERFORMANCE DEMONSTRATION INITIATIVE
REPRESENTATIVES (TAC NO. MD5615)

On July 24 and 25, 2007, Steve Doctor from the Pacific Northwest National Laboratory under contract with the Nuclear Regulatory Commission (NRC) and I attended a meeting at the Electric Power Research Institute (EPRI) - Performance Demonstration Initiative (PDI) in Charlotte, North Carolina. The meeting was closed to the public because of the viewing of sensitive information. The EPRI- PDI representatives were Carl Latiolais, Brad Thigpen, John Abbott, and Gloria Damon. The meeting agenda is enclosed.

The PDI program is an industry initiative for the implementation of the performance demonstration requirements in the American Society of Mechanical Engineers Code, Section XI, Appendix VIII, “Performance Demonstration for Ultrasonic Examination Systems.
The purpose of the meeting was for NRC to acquire knowledge on the EPRI-PDI’s performance demonstration databases that store the testing data for individual procedure and personnel qualifications. Specifically, the NRC was seeking to understand how the testing data is being stored, the labels being used for field (variables) identification, and a detailed description for each field.

Since 1994, PDI has maintained databases on test specific parameters and performance demonstration results associated with procedures, equipment, and personnel qualifications for the different Appendix VIII supplements. In early 2005, PDI informed the NRC that improvements were being made to their databases. These improvements would made data retrieval easier. The NRC expressed an interest in reviewing some of the information stored in the databases to study the effectiveness of performance-based ultrasonic testing (UT).

CONTACT: Donald G. Naujock, DCI/CPNB
(301) 415-2767

PDI requested that the NRC provide a list of variables of interest. On March 15, 2005, the NRC sent a letter listing the variable descriptions of interest. The list of variables was discussed at subsequent semi-annual NRC/PDI public meetings. PDI informed the NRC that most of the variables listed in the March 15, 2005 letter would be included in the updated performance demonstration databases. On July 27, 2006, the NRC sent a letter to PDI requesting a list of all the variables used in the PDI performance demonstration databases. In response to the NRC request, PDI proposed a joint meeting to review the performance demonstration database variables and their associated variable descriptions.

The databases have several sub-files that are transported to the piping and dissimilar metal weld (DMW) database main files which are shown in Enclosure 2. The field names in each sub-file and the descriptions of the data input to each field are identified below:

Enclosure 3 contains the sub-files for Supplement 2 and Supplement 3, piping database main file. The sub-files are:

- Piping Candidate Detection Grades,
- Piping Candidate Grading Attempts,
- Piping Candidate Grading Sheet Detection,
- Piping Candidate Grading Sheet Through wall Sizing (TWS),
- Specimens,
- Test Sets,
- Test Set Units, and
- Units.

Enclosure 4 contains the sub-files for Supplement 10, DMW database main file. The descriptions for the fields not shown in the DMW sub-files are identified in the piping sub-files. The candidate qualification attempts is a record of each attempt by a particular procedure or personnel using a particular procedure to qualify. The DMW sub-files are:

- DMW Candidate Grading Set,
- DMW Candidate Qualification Procedure Attempt Counts and Grade,
- DMW Candidate Qualification Procedure Attempts Information,
- DMW Candidate Qualification Skills Attempts,
- DMW Default Code Requirements,
- DMW Grading Units,
- DMW Maximum Detection False Calls - Lookup,
- DMW Minimum Detection Flaws - Lookup,
- DMW Procedure Types,
- DMW Samples,
- DMW Test Set Template Grading Units, and
- DMW Test Set Templates.

Enclosure 5 contains the sub-files for Supplements 4, 5, 6, and 7 reactor pressure vessel (RPV) database. The RPV main file is not depicted in a diagram. The sub-files are:

- Flaws,
- Grading Flaws,
- INR (inner nozzle radius) Flaws,
- INR Samples,

- INR Test Sets,
- Qualification Attempts,
- Samples,
- Scan Patches,
- Test Set Summary, and
- Test Sets.

Enclosure 6 contains the sub-files for the DMW configuration database with associated descriptions.

Enclosure 7 contains the performance demonstration flaw/grading unit test result file. This file tracks the sum of the results of each flaw/grading unit that are being used in the performance demonstration program.

Enclosure 8 is a draft summary of intergranular strss corrosion cracking (IGSCC) pass rates from 1999 through 2006. The data separates personnel attempting their first (initial) IGSCC performance demonstration from personnel attempting to updating their existing IGSCC qualification through the requalification process.

PDI demonstrated the data retrieval process by analyzing the vessel database for the root mean square (RMS) error of the remaining ligaments. A ligament is the distance from the end of a flaw to the either surface. The attendees articulated the variables and mathematical process to PDI's programer who set up the database quay. In less than an hour, a ligament RMS error value was generated. PDI will verify the RMS error value and present the information at the next NRC/PDI public meeting which is tentatively scheduled for December 5 and 6, 2007 in Charlotte, North Carolina.

Enclosures:
1. Agenda For Meeting With EPRI-PDI
2. Piping and Dissimilar Metal Weld Main Databases
3. Supplements 2 and 3 Piping Database Sub-files with Descriptions
4. Supplement 10 DMW Database Sub-files with Descriptions
5. Supplements 4, 5, 6, and 7 RPV Database Sub-files with Descriptions
6. DMW Configuration Database with Descriptions
7. Performance Demonstration Flaw/Grading Unit Test Result File
8. IGSCC Pass Rates 1999 Through 2006

- Qualification Attempts,
- Samples,
- Scan Patches,
- Test Set Summary, and
- Test Sets.

Enclosure 6 contains the sub-files for the DMW configuration database with associated descriptions.

Enclosure 7 contains the performance demonstration flaw/grading unit test result file. This file tracks the sum of the results of each flaw/grading unit that are being used in the performance demonstration program.

Enclosure 8 is a draft summary of intergranular strss corrosion cracking (IGSCC) pass rates from 1999 through 2006. The data separates personnel attempting their first (initial) IGSCC performance demonstration from personnel attempting to updating their existing IGSCC qualification through the requalification process.

PDI demonstrated the data retrieval process by analyzing the vessel database for the root mean square (RMS) error of the remaining ligaments. A ligament is the distance from the end of a flaw to the either surface. The attendees articulated the variables and mathematical process to PDI's programer who set up the database quay. In less than an hour, a ligament RMS error value was generated. PDI will verify the RMS error value and present the information at the next NRC/PDI public meeting which is tentatively scheduled for December 5 and 6, 2007 in Charlotte, North Carolina.

Enclosures:
1. Agenda For Meeting With EPRI-PDI
2. Piping and Dissimilar Metal Weld Main Databases
3. Supplements 2 and 3 Piping Database Sub-files with Descriptions
4. Supplement 10 DMW Database Sub-files with Descriptions
5. Supplements 4, 5, 6, and 7 RPV Database Sub-files with Descriptions
6. DMW Configuration Database with Descriptions
7. Performance Demonstration Flaw/Grading Unit Test Result File
8. IGSCC Pass Rates 1999 Through 2006

DISTRIBUTION:
DCI RF WENorris MMitchell ROHardies

ADAMS Package Accession No.: ML072960057

OFFICE	DCI/CPNB	DCI/CPNB
NAME	DGNaujock	TChan
DATE	10/19/2007	01/5/2007

OFFICIAL RECORD COPY

AGENDA FOR MEETING WITH THE
Electric Power Research Institute - Performance Demonstration Initiative
At
EPRI Non-Destructive Examination Center
1300 W.T. Harris Blvd
Charlotte, North Carolina

July 24, 2007

1. Introductions.
2. Review Examiner Proficiency Project.
3. Review Piping Database.
4. Review Dissimilar Metal Weld Database.

July 25, 2007

1. Introductions - Carry-Over from Previous Day.
2. Review Reactor Vessel Database.
3. Review Dissimilar Weld Configuration Database.
4. Review NRC Requests for Data.
5. Adjourn.

ENCLOSURE 1