



Industry and NRC Coordination Meeting Materials Programs Technical Exchange

PWROG Materials Subcommittee Update

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PWROG Materials Subcommittee Update

Agenda

- Update on PWROG Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors
- Update on PWROG Seal Encapsulation Guidance
- Update on PWROG Heater Sheath Work

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Update on PWROG Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors (1/3)

- **Purpose**

- Create the next revision (Revision 2) of WCAP-15988-NP “Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors”.
- The objective for Revision 2 to the WCAP is to align this document with other relevant industry guidelines, integrating the appropriate content into the WCAP as well as to adopt the latest operating experience and lessons-learned from use of the current revision of the WCAP.
- A team of utility, vendor and industry experts to create Revision 2 to WCAP-15988 was formed.

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Update on PWROG Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors (2/3)

- **Status**

- WCAP-15988-NP, Rev 2 “Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors” has been finalized and issued with updated “Mandatory” Guidance.

- Two action items in WCAP-15988-NP Revision 2 are mandatory for all PWRs under the definitions provided by NEI 03-08. Other than the change from “elements” to “objectives”, these two action items are essentially unchanged from WCAP-15988-NP Revision 1. **Therefore, each PWR should already be in compliance with these mandatory requirements. However, a review of each site’s PWR Boric Acid Corrosion Control Program (BACCP) should be completed to confirm compliance with these two mandatory requirements.**

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Update on PWROG Generic Guidance for an Effective Boric Acid Inspection Program for Pressurized Water Reactors (3/3)

- **Status (continued)**

- The two mandatory requirements are:

1. Each PWR utility is required to have a Boric Acid Corrosion Control Program (BACCP).

2. The Boric Acid Corrosion Control Program (BACCP) is required to encompass all of the objectives described in Section 4 of this WCAP document. The titles, organization, and number of these objectives in each plant-specific program may vary, so long as all of these objectives are met by the BACCP.

- The remainder of this WCAP describes generic guidance for developing plant-specific BACC Programs and procedures that address the 11 objectives. This generic guidance is not considered “Needed” or “Good Practice” as defined by NEI 03-08. PWRs should review their BACC Programs to make any appropriate changes and updates based on this additional generic guidance.

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Update on PWROG Seal Encapsulation Guidance (1/2)

- **Background**

- Seal caps, also known as leakage encapsulation devices, have been installed on some valves in the nuclear fleet, as a means to arrest or prevent leakage at the body to bonnet flange (e.g., gasket leakage). Encapsulation devices may have been installed during plant start up to prevent leakage from the valve or later in plant life after leakage from the main flange joint had already begun.
- Recent industry events have raised concerns by the NRC with these devices.
- The PWROG has been given the lead to address this issue and has been working with the NRC.

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Update on PWROG Seal Encapsulation Guidance (2/2)

- Latest Activities

- An industry survey was sent out to the entire fleet. The survey indicated the following:

- 6 sites with 8 units currently have them installed

- ✓ Sites are WCNOG, STP 1 and 2, Harris, Vogtle 1 and 2, Seabrook and Robinson.

- There are 25 seal caps installed at various locations at the 8 units. Currently out of the 25 installed caps, plants plan or have initiated Work Orders to remove 13 seal caps. This is based on feedback from the entire fleet of PWRs.

- The PWROG is also in the process of finalizing guidance in line with the NEI 03-08 initiative with the intent for it to be in place to support the Fall 2012 outages.

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Update on PWROG Heater Sheath Work (1/2)

- **Background**

- Recently, there have been events involving stainless steel pressurizer heater failures that have emerged within the industry. The general guidance provided thus far has been to remove the failed heaters as soon as possible to preclude structural damage to the primary pressure boundary.

- A heater failure results when the heater elements cannot conduct current to adequately provide heat to the pressurizer environment as designed. There are two main root causes for heater failure.

- The first involves a purely electrical shortage,

- While the second involves electrical failure as the result of a breach in the pressurizer heater sheath. Primary water can penetrate to the heater insulation and the heater elements. This damage can subsequently cause heater swelling that has been shown to potentially lead to structural damage in units.

- Westinghouse has issued Technical Bulletin 11-8, revision 1 which provides recommended actions for failed heaters.

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Update on PWROG Heater Sheath Work (2/2)

- **Latest Activities**
 - The PWROG has proposed a program that would begin in 2013 that would provide a methodology for acceptance of failure pressurizer heaters.

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Questions?