

**NRC/ASME Meeting  
January 6, 2004**

- ASME Presentation Topics:
  - Actions by ASME Task Group on Alloy 600/182/82 Issues
  - Actions by ASME Task Group on Boric Acid Corrosion
  - Use of MNSAs as a Section XI repair method
  - ASME Nuclear Codes & Standards process
  - Wrap-up and Q&A

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**TASK GROUP ON ALLOY  
600/182/82 ISSUES**

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**TASK GROUP ON ALLOY  
600/182/82 ISSUES**

- CHARTER
  - The Task Group on Alloy 600/182/82 Issues shall have the responsibility for developing and proposing Code revisions and Code Cases concerning Alloy 600/182/82 materials for ASME Section XI, Division 1 of the Boiler and Pressure Vessel Code sections.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

### • Membership

- Chair - Gary Park (Vice Chair of SCXI)
- Viki Armentrout (Dominion Energy)
- Warren Bamford (Westinghouse)
- Dr. Steven Doctor (Pacific Northwest Lab.)
- Wallace Norris (NRC)
- Kim Kietzman (EPRI)
- Koji Koyama (MHI)
- Michael Lashley (South Texas Project)
- Ben Montgomery (AmerenUE)
- Mike Robinson (Duke Energy)

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

### • Membership (cont.)

- Mike Sherwin (Wolf Creek Nuclear)
- Ed Siegel (Westinghouse)
- Ernest Throckmorton (Consultant)
- Dave Waskey (Framatome ANP)
- Dennis Weakland (First Energy)

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

### • HISTORY

- 02/01: SCXI Exec. was following VC Summer Cracking and was made aware of the cracking at Oconee. At this time the inspection requirements of the Code were brought into question. Investigating support for Code TG to codify industry resolution.
- 05/01: SCXI Exec. Committee decided to request coordinated work with EPRI and MRP Project. ASME letter sent to the MRP in June requesting support. SCXI decided that changes to the inspection requirements were needed.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)
  - 08/06/01: Task Group first met to start Code action to address the emerging issue. MRP responded in the affirmative to the request for support.
  - 12/10/01: Assignments made to address NRC Presentation questions
    - Development
      - Acceptance Criteria
      - Examination Figures
      - Method and extent of NDE
      - Proper Code placement of the requirement
      - How often to be examined.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)
  - 02/25/02: Draft action as presented and discussed. This included a discussion on the acceptance criteria.
  - 04/29/02: The Davis Besse event was discussed. Draft action was discussed and refined. Additional smaller meetings were scheduled between normal TG meetings resulting in a more comprehensive action for the Sept. meeting. The acceptance criteria was still being developed however expectation was that it would be ready for the Sept. Meeting.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)
  - 09/09/02
    - Letter from Mr. Brian Sharon (NRC) to Mr. Richard Gimple was discussed. The letter expressed the concern that utilities are not properly controlling boric acid leakage within their plants. Another Task Group would be set up to address inspection and corrective action for boric acid system leakage.
    - Action with associated White Paper was presented. The NRC had reviewed the proposed action prior to the meeting and provided written comments.
    - Acceptance criteria was distributed to the TG, indicating that this action would be voted on next meeting at Evaluation and Standards Subgroup.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)

- 12/09/02

- TG continued on the Code revisions. The Chair thought it was important to hear from the industry, NRC and MRP before determining the course of action going forward. Another small group was assigned to work between normal TG meetings.
    - The acceptance criteria was at the SG Evaluations and Standards

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)

- 02/24/03

- Proposed action awaiting MRP development of frequency for re-inspections.
    - The flaw acceptance criteria passed SCXI, including both a Code Case and Code change to IWB-3660.

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## TASK GROUP ON ALLOY 600/182/82 ISSUES

- HISTORY (cont.)

- 05/02/03: Flaw acceptance criteria passed MC as second consideration with the editorial changes (now approved and in Suppl. 10 as Code Case N-694).

- 12/08/03

- TG prepared a draft action and provided to SCXI for comments and status. MRP provided a draft re-inspection frequency requirement. MRP reported that the basis document is completed and in review routing for approval. The basis may be ready for the SCXI meetings in Feb. 2004.
    - Flaw acceptance criteria established for top head penetrations was revised to encompass bottom head penetrations. This action passed SCXI and proceeds to MC.

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

- Draft Code Action
  - VT-5 Visual Exam. ("Bare Metal Visual")
  - Vol/Surface every 3 EDY not to exceed 10 years
  - Initial Exam. (100%)
  - Successive Exams
    - If leak or planar flaw
      - 100% vol/surface exam of all items every 40 months
  - Additional Exam
    - If leak or planar flaw
      - 100% vol/surface exam of all items prior to start-up

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

- Draft Code Action and EA-03-009
  - Formula for determining EDY is the same
  - The criteria for the "bin" determination is also the same
  - Current markup of draft Code action includes expected MRP re-inspection frequencies subject to TG review of MRP technical basis (expected in 1<sup>st</sup> quarter 2004)

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

#### Draft Code Action

#### EA-03-009

- All Categories
  - 100% VT-5 and Vol./Surface at first outage
- High Cat.
  - 100% VT-5 every RFO and Vol./Surface every 3 EDY not to exceed 10 years
- High Cat.
  - 100% Bare Metal Visual and Vol./Surface every RFO

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

#### Draft Code Action

- Mod. Cat.
  - 100% VT-5 every RFO and Vol./Surface every 3 EDY not to exceed 10 years

#### EA-03-009

- Mod. Cat.
  - 100% Bare Metal Visual or Vol./Surface every RFO
  - In addition, Visual and Vol./Surface at least every 2 RFO.

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

#### Draft Code Action

- Low Cat.
  - 100% VT-5 every 3 RFO and Vol./Surface every 3 EDY not to exceed 10 years

#### EA-03-009

- Low Cat.
  - Bare Metal Visual every 3 RFO or every 5 years
  - Vol./Surface within 2 yrs. And at least every 4 RFOs or 7 years

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

- Code Action Status
  - Flaw Acceptance Criteria
    - Upper Head approved as CC N-694 (Supplement 10)
    - Lower Head approved through SC XI (12/03)
  - Exam. Requirements
    - Draft action presented to SC XI (12/03) (Still awaiting final MPR approval of re-inspection frequency and the technical basis for the frequency.)

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### TASK GROUP ON ALLOY 600/182/82 ISSUES

- Proposed Plan (based on MRP Plan and Basis rec'd before Feb. Code Meetings)
  - LB by SGs and SCXI in March (Code chg. and Code Case)
  - Approval by SGs and SCXI in May
  - Public review and LB by Main Committee in July and approval by MC in Aug.
  - Approval by BNCS in Oct.

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### TASK GROUP BORIC ACID CORROSION

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### TASK GROUP BORIC ACID CORROSION

- HISTORY
  - 08/19/02: Letter received from NRC requesting Code Action to address Boric Acid concerns
  - 09/10/02: Task Group developed with a Chairperson identified.
  - 12/09/02: Initial meeting and charter drafted
  - 02/24/03: TG met and prepared a draft action to address changes to the code

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## TASK GROUP BORIC ACID CORROSION

- HISTORY (cont.)
  - 08/24/03: Met with WG ISI Optimization to discuss the draft action. Comments were made and the action was sent back to be revised
  - 12/08/03: TG met and revised action to move forward. This action was to address what to do when leakage is located during the inspection.

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## TASK GROUP BORIC ACID CORROSION

- TG is focusing on two issues
  - Actions taken when a leak is detected (evaluation and corrective action)
  - Improving the ability to detect leaks in borated systems

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## TASK GROUP BORIC ACID CORROSION

- Evaluation and Corrective Actions
  - Change being proposed to add specific action to require the removal of boric acid accumulations
  - Add a VT-3 examination of the area for a determination of the impact of any corrosion
  - Create a separate section in IWB-3522 for leakage identified in borated systems
  - Change specific reference to minimum design for thickness measurements rather than the current reference to 10%.

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## TASK GROUP BORIC ACID CORROSION

- Evaluation and Corrective Actions (cont.)

- Status

- Code change introduced at WGISIOP on 12/08/03
    - Changes were discussed and the Code action will return to WGISIOP in 02/04
    - In parallel the Code change will go to WGPT and SGWCS in 02/04
    - Projected to be at SCXI in May/August 2004
    - Projected to be at MC in August/December 2004

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## TASK GROUP BORIC ACID CORROSION

- Ability to Detect Leakage

- Change for additional requirements for insulation removal for Alloy 600/182/82 locations in Class 1 reactor coolant system (this may include a new Exam Category in the Code)
  - Basis for periodicity is still being developed
  - Revise IWA-5242 to require that examination is demonstrated to occur over 100% of the subject surface area (essentially a full "bare metal exam")

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## TASK GROUP BORIC ACID CORROSION

- Ability to Detect Leakage

- Status

- Introduce to WGISIOP in 05/04
    - Projected to be at SCXI in 02/05
    - Projected to be at MC in 05/05

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## Mechanical Nozzle Seal Assemblies (MNSAs) as a Section XI Repair Method

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## MNSAs as a Code Repair

- 10/21/03: NRC letter to SCXI and SCIII requesting position on use of MNSAs
- 12/03: A draft Code Case for Section XI repairs using a MNSA device was submitted to several SCXI and SCIII committees for review
- Input provided to initiator regarding needed changes for the next version of the draft Case
- In Section XI, SGRRA has a full day TG planned in 2/04 to review the next version of the draft Case; SGWCS is also planning review

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## MNSAs as a Code Repair

- SGRRA discussion 12/03 indicated four possible actions for the Code to take:
  - 1) Section XI interpretation stating that MNSAs are currently permitted; 2) Prepare ASME letter to the NRC stating MNSAs are currently permitted; 3) Prepare a Code Case; or 4) Prepare a nonmandatory appendix to Section XI
- Most SGRRA members preferred a multi-pronged approach of 1) and 2) at 2/04 meeting and continue preparing either a Case or appendix and this is the current plan

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### MNSAs as a Code Repair

- With significant support provided by the initiator of the Case, a Case or nonmandatory appendix could be ready for SCXI review by August, with Main Committee approval in December 2004
- SCIII is also planning on review and a joint Section III and Section XI Code Case is a possibility

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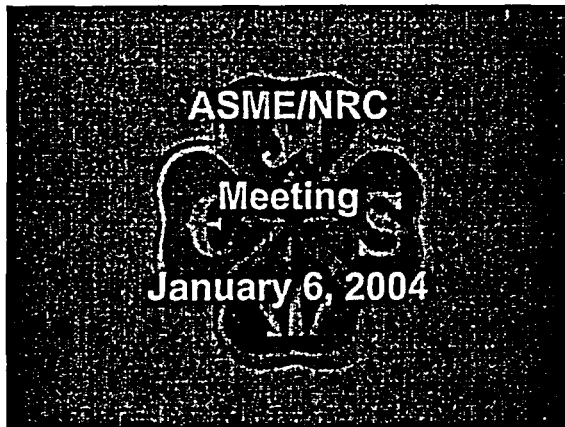
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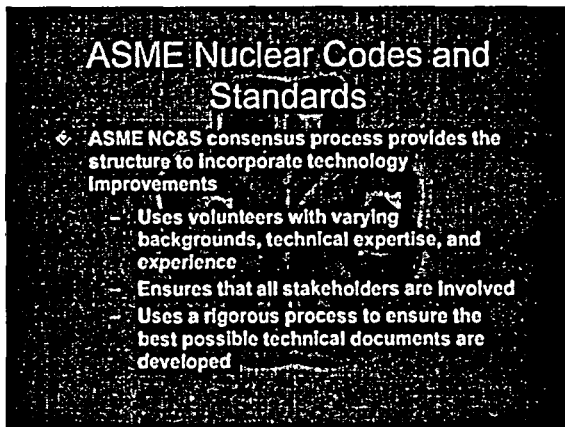
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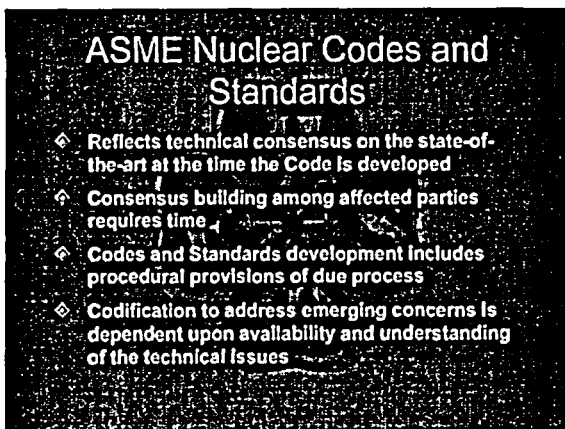
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## ASME Nuclear Codes and Standards

### ◆ C&S Technology Institute

- Manages C&S research projects
- Anticipates future technology needs
- Bridges gaps between technology and standardization
- Assists in expediting revisions to codes and standards
- Projects are funded by the public and private sector

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## ASME Nuclear Codes and Standards

- ◆ Currently, no formal mechanism to notify code users of emerging issues
- ◆ ASME can assist in communication of NRC notifications
- ◆ NCS Communicator: ASME Newsletter containing articles of interest for Codes and Standards users

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