



A BNFL Group Company

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# **CROSSFLOW Ultrasonic Flow Measurement System**

## **Status Update**

**April 22, 2004**



# CROSSFLOW Action Plan Status Update

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- Agenda
  - Background Information
  - Generic Action Plan Status
  - OPPD Action Plan Status
  - Exelon Action Plan Status
  - WOG CROSSFLOW Task Force Formation
  - Future Actions
  - Summary

# CROSSFLOW Action Plan Status Update

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- Background Information
  - Westinghouse/AMAG interacted with NRC on two fronts
    - CROSSFLOW sensitivity to feedwater system configuration/alignment
    - Allegations related to the accuracy of CROSSFLOW
  - Interaction Chronology
    - CROSSFLOW Configuration Sensitivity Interactions
      - Telecon on February 9, 2004, and in subsequent calls, NRC management was informally notified and kept informed of CROSSFLOW issue status.
      - Issuance of Technical Bulletin, TB-04-4, “Information Regarding Recent CROSSFLOW Ultrasonic Flow Measurement System Performance Observations”. Copy provided to NRC.
      - Telecon on February 12, 2004 with NRC staff discussed Ft. Calhoun and Byron issues and TB-04-4.
    - Allegation Task Team Interactions
      - Meeting on March 12 (all day), also discussed configuration sensitivity
      - Conference call on March 18 (5 hours)
      - Meeting on March 26 (half day), also discussed configuration sensitivity
      - Several technical and status telcons

# CROSSFLOW Action Plan Status Update

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- Background Information (continued)
  - Extensive documentation provided to NRC
  - UFM Task Group report to NRC management March 31, 2004
    - Draft UFM Task Group Report issued on April 16

# CROSSFLOW Action Plan Status Update

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## Westinghouse Action Plan Schematic



# CROSSFLOW Action Plan Status Update

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- Generic Action Plan
  - Evaluate Operating Experience
  - Flow Profile and Signal Contamination
  - Installation Criteria
  - Process Root Cause Analysis

# CROSSFLOW Action Plan Status Update

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- Evaluate Operating Experience
  - CROSSFLOW User Survey
    - Survey questions issued on March 5, 2004 to all CROSSFLOW Users
    - Responses returned to date ~80%
    - Survey data compilation report to be issued by April 30, 2004
    - Living operating experience database preparation underway
  - Review Ft. Calhoun and Byron installation data and compare with other installations to identify any outlying conditions



# CROSSFLOW Action Plan Status Update

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- Flow Profile and Signal Contamination



# CROSSFLOW Action Plan Status Update

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- Installation Criteria

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# CROSSFLOW Action Plan Status Update

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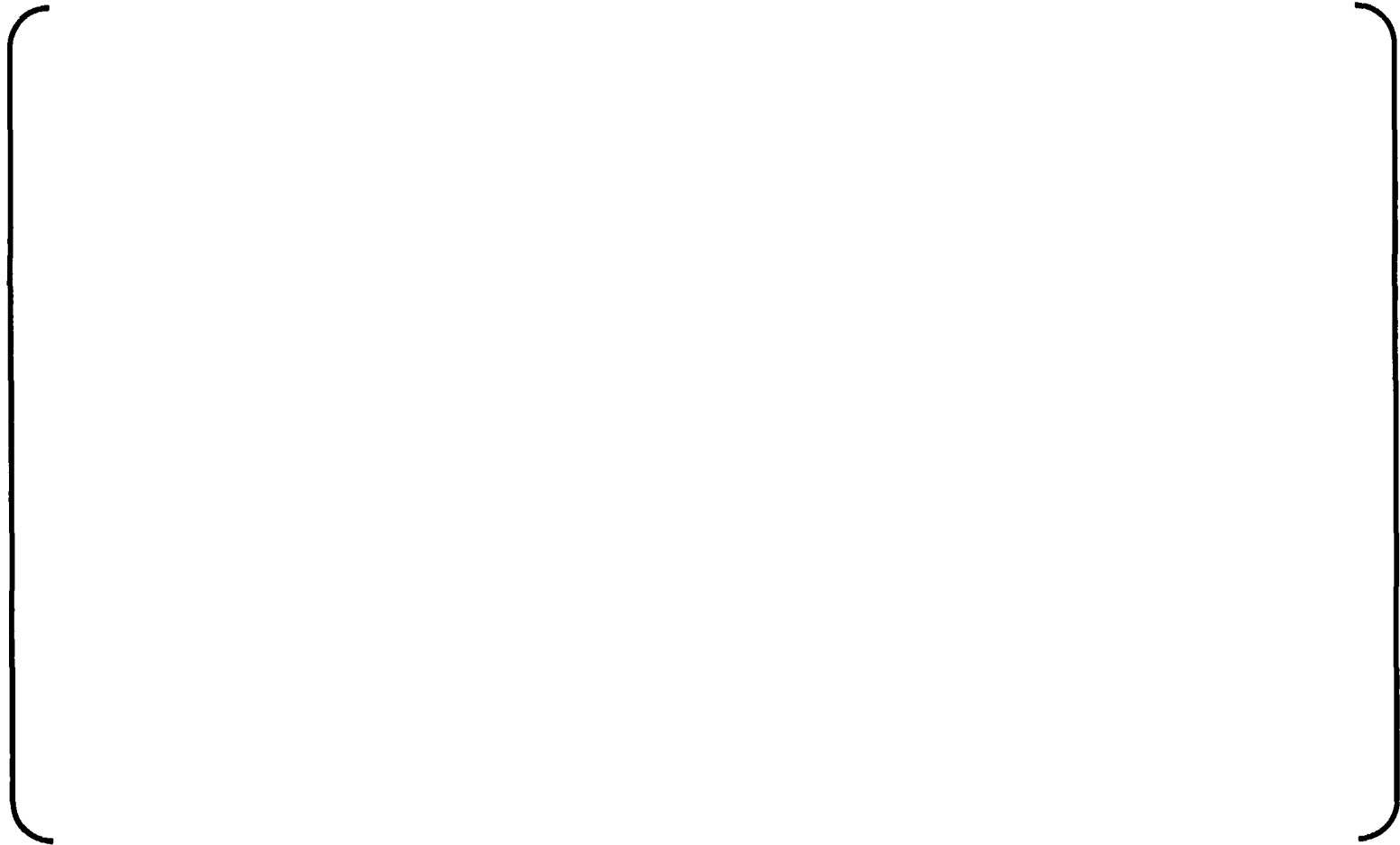
- Westinghouse Process Root Cause Analysis (RCA)



# CROSSFLOW Action Plan Status Update

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- Westinghouse Process Root Cause Analysis (continued)



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# CROSSFLOW Action Plan Status Update

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- OPPD Action Plan Status



# CROSSFLOW Action Plan Status Update

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- OPPD Action Plan Status (continued)



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# CROSSFLOW Action Plan Status Update

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- Exelon Action Plan Status



# CROSSFLOW Action Plan Status Update

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- Exelon Action Plan Status (continued)

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# CROSSFLOW Action Plan Status Update

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- WOG CROSSFLOW Task Force Formation
  - Task Force formation approved on April 14, 2004
  - Met with NRC management on April 15, 2004
  - Letter issued to WOG Steering Committee and CROSSFLOW Users on April 16, 2004
  - Initial meetings being proposed in Windsor, CT May 12-13, 2004

# CROSSFLOW Action Plan Status Update

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- Future Actions
  - Continue NRC information interactions
  - Complete Generic Action Plan
  - Complete Ft. Calhoun Action Plan and complete initial implementation of CROSSFLOW for Appendix K power uprate
  - Complete Exelon Action Plan and recommendations for future CROSSFLOW application
  - Finalize WOG CROSSFLOW Task Force formation
    - Support CROSSFLOW Users in responding to pending NRC UFM generic communication
  - Continue to assess acceptability of keeping CROSSFLOW inservice
  - Assess impact of generic and plant specific action plans on current operations

# CROSSFLOW Action Plan Status Update

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- Summary
  - Continue to interact with NRC on CROSSFLOW issue
  - Continue working with OPPD and Exelon to finalize technical assessments and implement recommendations
  - Define and implement improved project implementation tools to improve rigor in CROSSFLOW product area
  - Continue communicating with all CROSSFLOW Users on routine basis



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