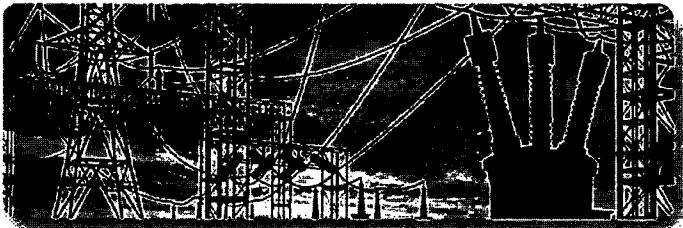


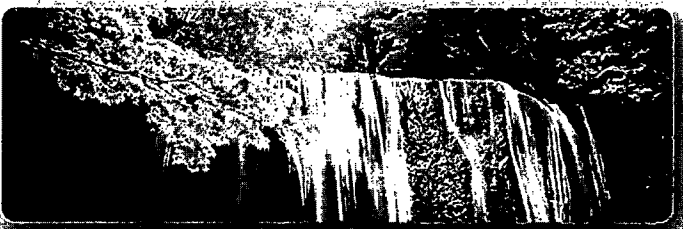
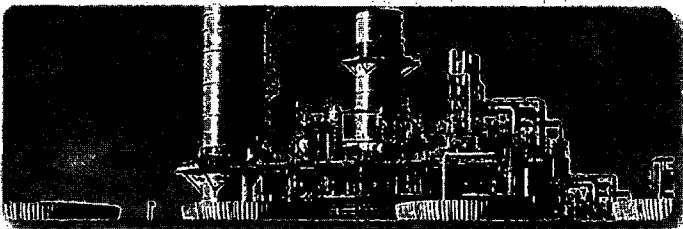


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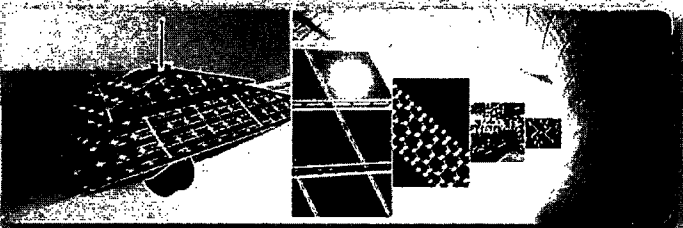
NDE Program update



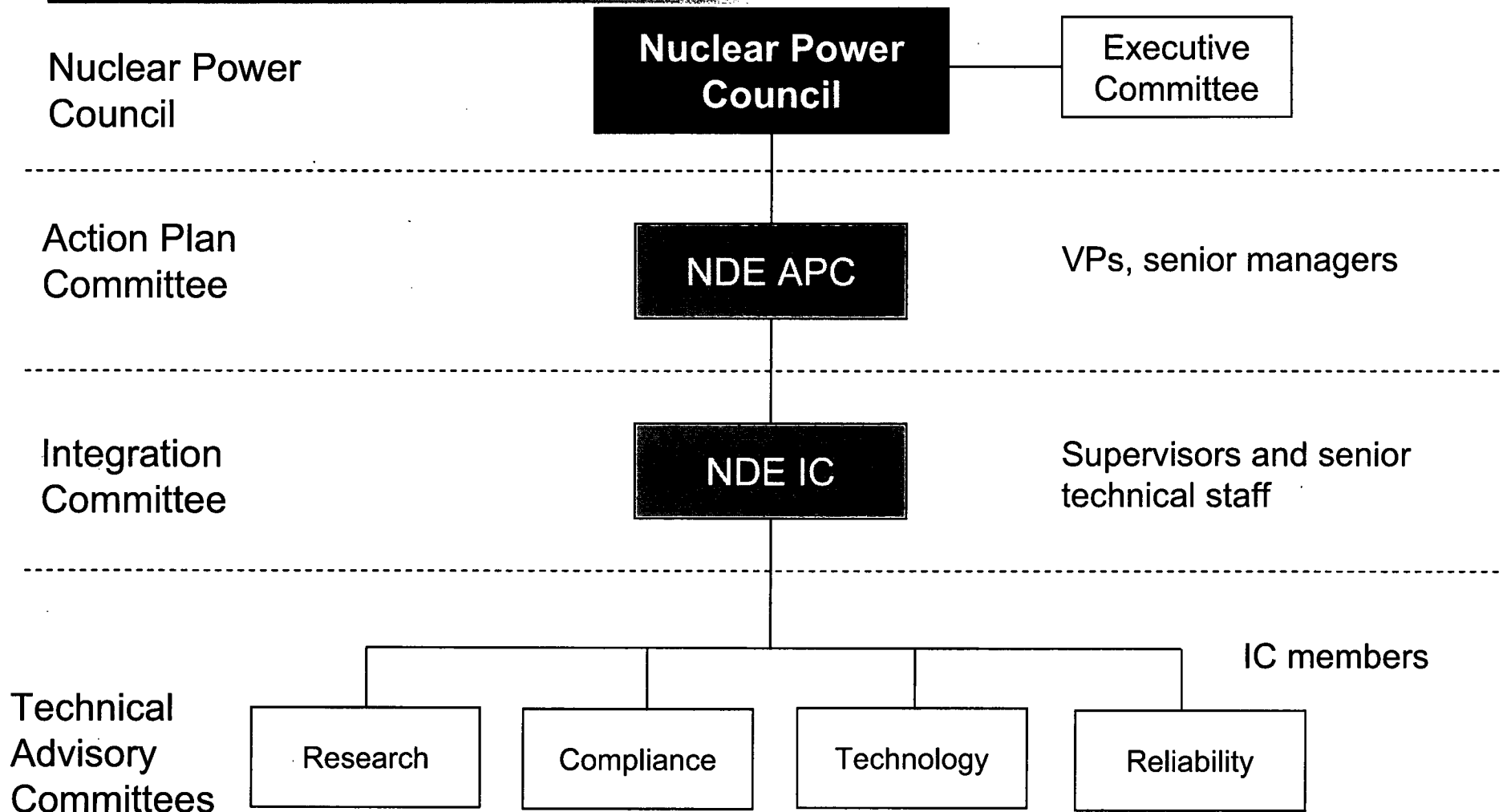
Joe Donahue, Progress Energy
Chairman, NDE APC

Greg Selby, EPRI
Director, NDE

NRC/Industry Management Meeting
June 21. 2011



EPRI NDE advisory structure



Contents

- RES / EPRI MOU
- Cast stainless steel
- Dissimilar metal welds NDE reliability

Regulatory collaboration

- Memorandum of Understanding
 - Between EPRI and RES
 - Several topical Addenda
- Addendum on NDE
 - Several Attachments
 - Visual examination
 - Cast austenitic stainless steel
 - UT/RT for repairs, replacements, and modifications
 - Documentation of the basis for Appendix VIII
 - RMSE – ID pipe examinations depth sizing
 - Biweekly coordination call

Regulatory collaboration

- Addendum on NDE
 - Several Attachments
 - Visual examination
 - RES conducting a round robin test on reliability of remote visual examination for detecting cracks
 - Invited industry collaboration
 - Phase 1 complete – ‘trial run’ round robin
 - Phase 2 in 2012 – round robin including qualified, field examination teams
 - Phase 3 in 2013 – opportunity for trying advanced technologies

Cast stainless steel

- NDE is difficult but properties are good
- CASS is subject to thermal aging embrittlement
- EPRI is developing a PFM approach
 - Determine the flaw size that NDE should detect
 - Basis for Code changes allowing IWB-3000-style flaw acceptance criteria
 - Help resolve open license renewal issue faced by W plants regarding commitments in GALL XI.M12
- EPRI contractor has requested RES provide access to unpublished background data held at ANL

Cast stainless steel

- RES proposed a trade
 - EPRI provide all of the resulting work generated using the ANL data – e.g., all supporting documents and calculations
- Industry is receptive - transmit data to RES at end 2011
- Now discussing:
 - Definition of what RES will receive
 - Legal aspects
 - IP
 - How to transmit the information to NRC (RES proposed modifying the MOU)

Dissimilar metal weld NDE reliability

- ASME Section XI, Appendix VIII qualified procedures are capable of performing high quality reliable examinations
 - Numerous examinations have been performed and the large majority of flaws detected were effectively evaluated, repaired or mitigated
- Industry has several completed, executing, and proposed activities to support continuous improvement
 - Technical capability of the workforce
 - Smoothness of industry response

Industry actions for continuous improvement

- **Completed actions**

- 1) Dissimilar metal weld guideline was developed and published in June 2009
Nondestructive Evaluation: Guideline for Conducting Ultrasonic Examinations of Dissimilar Metal Welds; product ID 1018181; public
- 2) Several similar and dissimilar metal weld samples have been fabricated that contain embedded flaws; available for practice and training
- 3) NDE capability for embedded fabrication flaws was evaluated and the documented to support changes to the Section III acceptance criteria
Advanced Nuclear Technology: Reduction of American Society of Mechanical Engineers III Weld Fabrication Repairs – Fitness for Purpose; product ID 1019217; public
- 4) Publishing OE annually
Nondestructive Evaluation: Dissimilar Metal Piping Weld Examination Guidance Volume 8; product ID 1021149
- 5) Supported xLPR with statistical analysis of PDI qualification databases
Materials Reliability Program: Development of Probability of Detection Curves for Ultrasonic Examination of Dissimilar Metal Welds (MRP-262); product ID 1019088; public

Industry actions for continuous improvement

- **Current actions**

- 1) Industry is preparing a Guideline for evaluating ultrasonic indications
Technical report September 2011, public
Series of implementation workshops beginning Fall 2011
- 2) Continue to work with NRC on evaluating data in PDI databases
 - Currently working with RPV (for 10CFR50.61a) and weld overlay data
 - Future collaborations will be considered if a clear need is identified
 - Data is secure and great care is needed to preserve integrity
- 3) Continue to gather OE and transmit lessons learned to the fleet
Annual updates

- **Future actions** (proposed for funding in 2012)

- 1) Embedded flaw NDE computer based training course
- 2) Develop secure, QA'd database platform and interface to support future statistical analyses of qualification databases

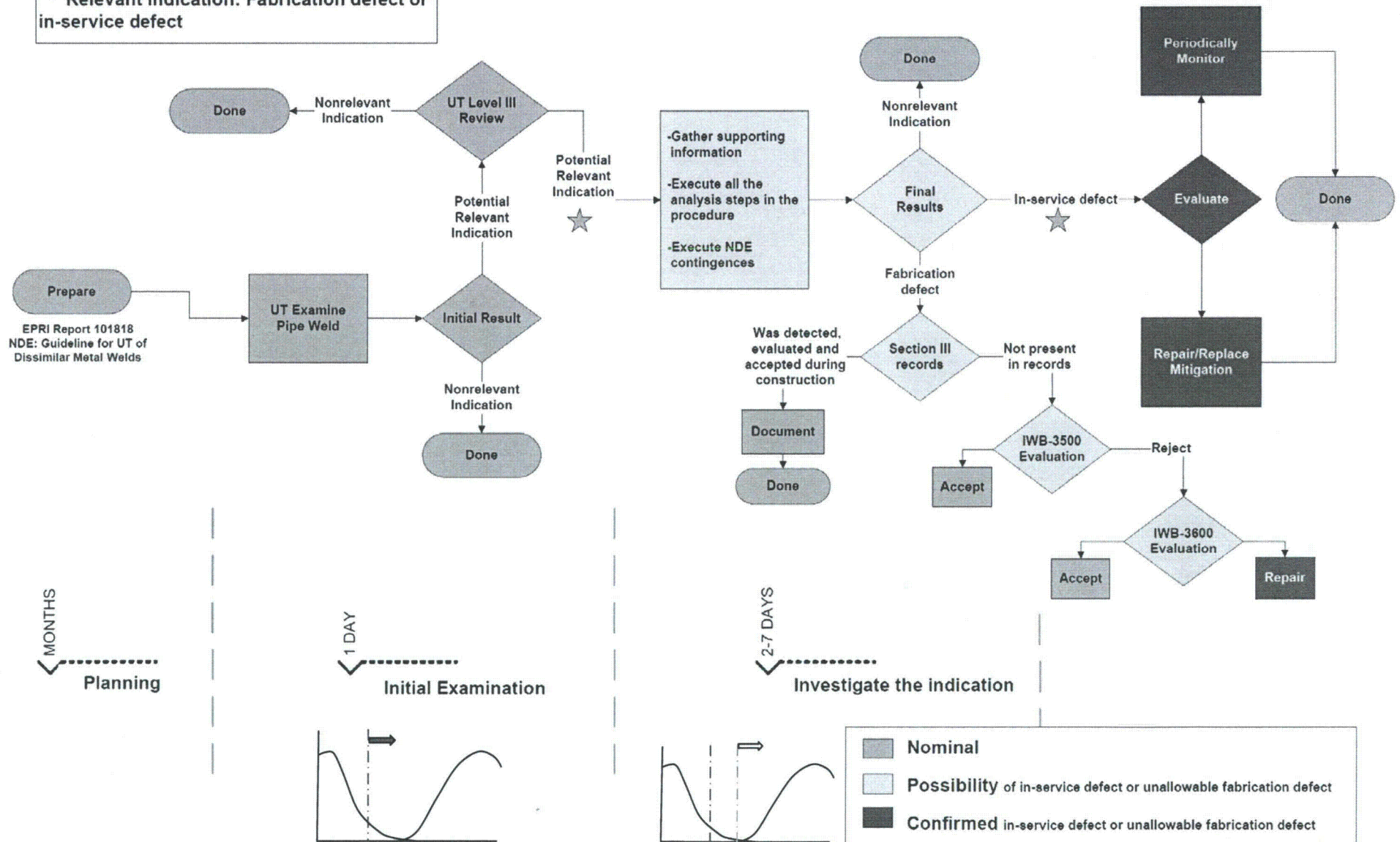
Industry actions for continuous improvement

- Smoothness of industry response
 - In isolated instances industry (utilities, Issue Programs, NRC) have expended significant resources on ultimately inconsequential conditions
 - Issue Programs and NRC begin closely monitoring before the NDE procedure has been implemented fully
 - Everyone reacts with too much energy, too quickly
 - We have a ‘red flag’ response when we see the yellow flag

Weld Inspection Task Flow

* Non-relevant indication: Geometry, Weld interface, etc.

* Relevant indication: Fabrication defect or in-service defect





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