

# **NRC/CON EDISON ENGINEERING MANAGEMENT MEETING**

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**OCTOBER 25, 2000**



# AGENDA

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- INTRODUCTION
- NRC OVERVIEW
- CON ED PRESENTATION
- SUMMARY

# ASSESSMENTS

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- 11/96 NRC INTEGRATED ASSESSMENT (IPAP)
- 3/97 SALP REPORT
- 1/98 PERFORMANCE REVIEW LETTER
- 5/98 CON ED INDEPENDENT SAFETY ASSESSMENT (ISA)
- 6/98 NRC EVALUATION TEAM (NET)
- 4/99 NRC PLANT PERFORMANCE REVIEW (PPR)
- 9/99, 3/00 NRC AUGMENTED INSPECTION TEAMS
- 3/00 NRC PPR
- 5/00 NRC SENIOR MANAGEMENT MEETING - AGENCY FOCUS DESIGNATION
- 7/00 CON ED ENGINEERING SELF-ASSESSMENT
- 7/00, 8/00 NRC EMERGENCY PREPAREDNESS AND STEAM GENERATOR INSPECTION REPORTS
- 10/00 NRC ASSESSMENT FOLLOW UP LETTER (MULTIPLE DEGRADED CORNERSTONES)

# **SENIOR MANAGEMENT RESULTS LETTER**

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- **COMMUNICATION/ COORDINATION AMONG SITE ORGANIZATIONS**
- **ENGINEERING SUPPORT/ RESOLUTION OF PLANT PROBLEMS**
- **CONFIGURATION MANAGEMENT/ CONTROL**
- **EQUIPMENT RELIABILITY/ CORRECTIVE ACTION BACKLOGS**
- **OPERATOR KNOWLEDGE/ STATION TRAINING/ PROCEDURES**
- **EMERGENCY PREPAREDNESS**
- **BROAD PERFORMANCE ISSUES/DEFICIENCIES IN CORRECTIVE ACTION PROGRAM EFFORTS**
- **PAST UTILITY IMPROVEMENT INITIATIVES/LIMITED EFFECTIVENESS**

# **POST - SMM RESULTS MEETING & ASSESSMENT FOLLOW-UP LETTER**

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- **MEETING CALLED FOR IN MAY 2000 SENIOR MANAGEMENT LETTER**
- **MEETING SUMMARIZED RECENT PLANT PERFORMANCE**
  - **PERFORMANCE INDICATORS & INSPECTION FINDINGS**
- **LETTER PROVIDES NEAR TERM PLANS FOR NRC MONITORING OF PERFORMANCE IMPROVEMENT EFFORTS**
- **LETTER PATTERNED AFTER “MULTIPLE DEGRADED CORNERSTONE LETTER” FROM MC 0305**
- **LETTER HIGHLIGHTS:**
  - **95003 INSPECTION**
  - **PERIODIC MANAGEMENT MEETINGS & SITE VISITS**

# **DISCUSSION TOPICS**

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- **ENGINEERING SELF - ASSESSMENT**
- **AUXILLARY FEEDWATER SYSTEM FUNCTIONAL ASSESSMENT**
- **RECENT ENGINEERING ISSUES**

# 95003 INSPECTION

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## KEY ATTRIBUTES

- FOR MULTIPLE DEGRADED CORNERSTONES
- “MORE DIAGNOSTIC THAN INDICATIVE”
- STRESSES “INDEPENDENT” ASSESSMENT BY NRC
- REQUIRES SAMPLING FOR ALL KEY AREAS OF AFFECTED STRATEGIC PERFORMANCE AREAS
- INCORPORATES VERTICAL SLICE OF SELECTED SYSTEM(S)
- “NOT INTENDED TO DUPLICATE...HOWEVER, SOME REPETITION MAY BE NECESSARY”
- “AIDS NRC IN DECIDING WHETHER ADDITIONAL ACTIONS ARE NECESSARY”

# STRATEGIC PERFORMANCE AREA

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## 95003 INSPECTION PROCEDURE ELEMENTS

- REACTOR SAFETY
  - ▶ DESIGN
  - ▶ CONFIGURATION CONTROL
  - ▶ EQUIPMENT PERFORMANCE
  - ▶ PI&R
  - ▶ PROCEDURE QUALITY
  - ▶ HUMAN PERFORMANCE
  - ▶ EMERGENCY PREPAREDNESS
  
- RADIATION SAFETY
  - ▶ *NOT APPLICABLE*
  
- PHYSICAL PROTECTION
  - ▶ *NOT APPLICABLE*

# 95003 STAFFING

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- APPROXIMATE SCOPE 12 INSPECTORS FOR 3 WEEKS
- LED BY BRANCH CHIEF
- SUBSUMES AN NRC SSDI SCHEDULED FOR JANUARY
- PROVIDES A LEVEL OF INDEPENDENCE
  - SUPPORT FROM HQs AND FROM OTHER REGIONS
  - SYSTEM DESIGN AND CORRECTIVE ACTION CONTRACTORS PROVIDED

INDIAN POINT 2 (October 2000 Evaluation)  
**SUMMARY, by Quarter, of INPUTS TO NRC ACTION MATRIX**

Cornerstone	CY 1999		CY 2000				CY 2001	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
IE				PI4 White	IF3 <sup>1</sup> Yellow or Red	IF3 Yellow or Red	IF3 Yellow or Red	IF3 Yellow or Red
MS	IF1 <sup>2</sup> Yellow	IF1 Yellow	IF1 Yellow PI2 <sup>4</sup> White	IF1 Yellow PI5 White	→	→ <sup>3</sup>		
BI			PI3 <sup>4</sup> Yellow					
EP	IF2 White	PI1 <sup>5</sup> White IF2 White	IF2 White	IF2 White IF4 White IF5 White IF6 White	IF4 White IF5 White IF6 White	IF4 White IF5 White IF6 White	IF4 White IF5 White IF6 White	
Matrix Column	N/A	N/A	N/A	Multiple Degraded	Multiple Degraded	Multiple Degraded	Multiple Degraded	Single Degraded

<sup>1</sup>Classification based on event effects on CDF and LERF. NRC has preliminarily concluded that the tube failure was caused by a licensee performance issue. Final determination is pending supplemental information to be provided to address questions from the 9/26 Regulatory Conference.

<sup>2</sup>Published in the RROP "Feasibility Review," Attachment 7 to Sec'y 00-0049. The review of this event preceded the initiation of the Revised Reactor Oversight Program (RROP). While the August 1999 event pre-dates the initial implementation of the ROP, useful risk insights can be derived from considering the results of the SDP for that event.

<sup>3</sup>In accordance with Manual Chapter 0305, this inspection finding will not be removed from consideration of future agency actions until the identified weaknesses have been corrected.

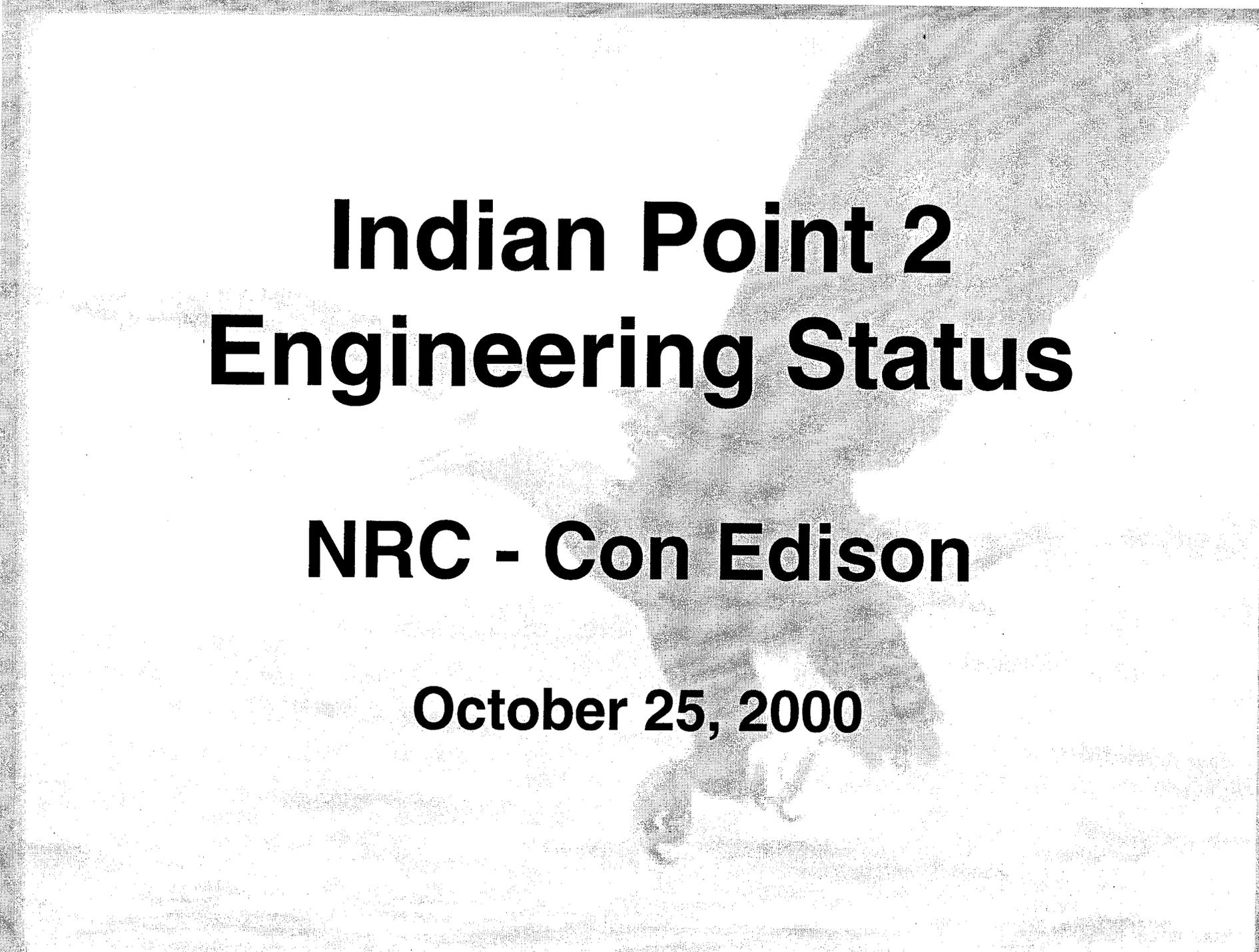
<sup>4</sup>As posted on the NRC's external web page for the first quarter of 2000.

<sup>5</sup>If a finding and PI turn color because of the same underlying issue, only one will be counted because of double jeopardy considerations.

## NRC Action Matrix

	Licensee Response Column	Regulatory Response Column	Degraded Cornerstone Column	Multiple/ Repetitive Degraded Cornerstone Column	Unacceptable Performance Column	
<b>RESULTS</b>	All Assessment Inputs (Performance Indicators (PIs) and Inspection Findings) Green, Cornerstone Objectives Fully Met	One or Two White Inputs (in different cornerstones) in a Strategic Performance Area, Cornerstone Objectives Fully Met	One Degraded Cornerstone (2 White Inputs or 1 Yellow Input) or any 3 White Inputs in a Strategic Performance Area, Cornerstone Objectives Met with Minimal Reduction in Safety Margin	Repetitive Degraded Cornerstone, Multiple Degraded Cornerstones, Multiple Yellow Inputs, or 1 Red Input, Cornerstone Objectives Met with Longstanding Issues or Significant Reduction in Safety Margin	Overall Unacceptable Performance, Plants Not Permitted to Operate Within this Band, Unacceptable Margin to Safety	
<b>RESPONSE</b>	Regulatory Performance Meeting	None	Branch Chief (BC) or Division Director (DD) Meet with Licensee	DD or Regional Administrator (RA) Meet with Licensee	RA (or EDO) Meet with Senior Licensee Management	Commission meeting with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee Corrective Action with NRC Oversight	Licensee Self Assessment with NRC Oversight	Licensee Performance Improvement Plan with NRC Oversight	
	NRC Inspection	Risk-Informed Baseline Inspection Program	Baseline and supplemental inspection procedure 95001	Baseline and supplemental inspection procedure 95002	Baseline and supplemental inspection procedure 95003	
	Regulatory Actions	None	Supplemental inspection only	Supplemental inspection only	-10 CFR 2.204 DFI -10 CFR 50.54(f) Letter - CAI/Order	Order to Modify, Suspend, or Revoke Licensed Activities
<b>COMMUNICATION</b>	Assessment Reports	BC or DD review/sign assessment report (w/ inspection plan)	DD review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan)	RA review/sign assessment report (w/ inspection plan)  Commission Informed	
	Annual Public Meeting	SRI or BC Meet with Licensee	BC or DD Meet with Licensee	RA (or designee) Discuss Performance with Licensee	EDO (or Commission) Discuss Performance with Senior Licensee Management	Commission Meeting with Senior Licensee Management
	INCREASING SAFETY SIGNIFICANCE ----->					

1. It is expected in a few limited situations that an inspection finding of this significance will be identified that is not indicative of overall licensee performance. The staff will consider treating these inspection findings as exceptions for the purpose of determining appropriate actions.



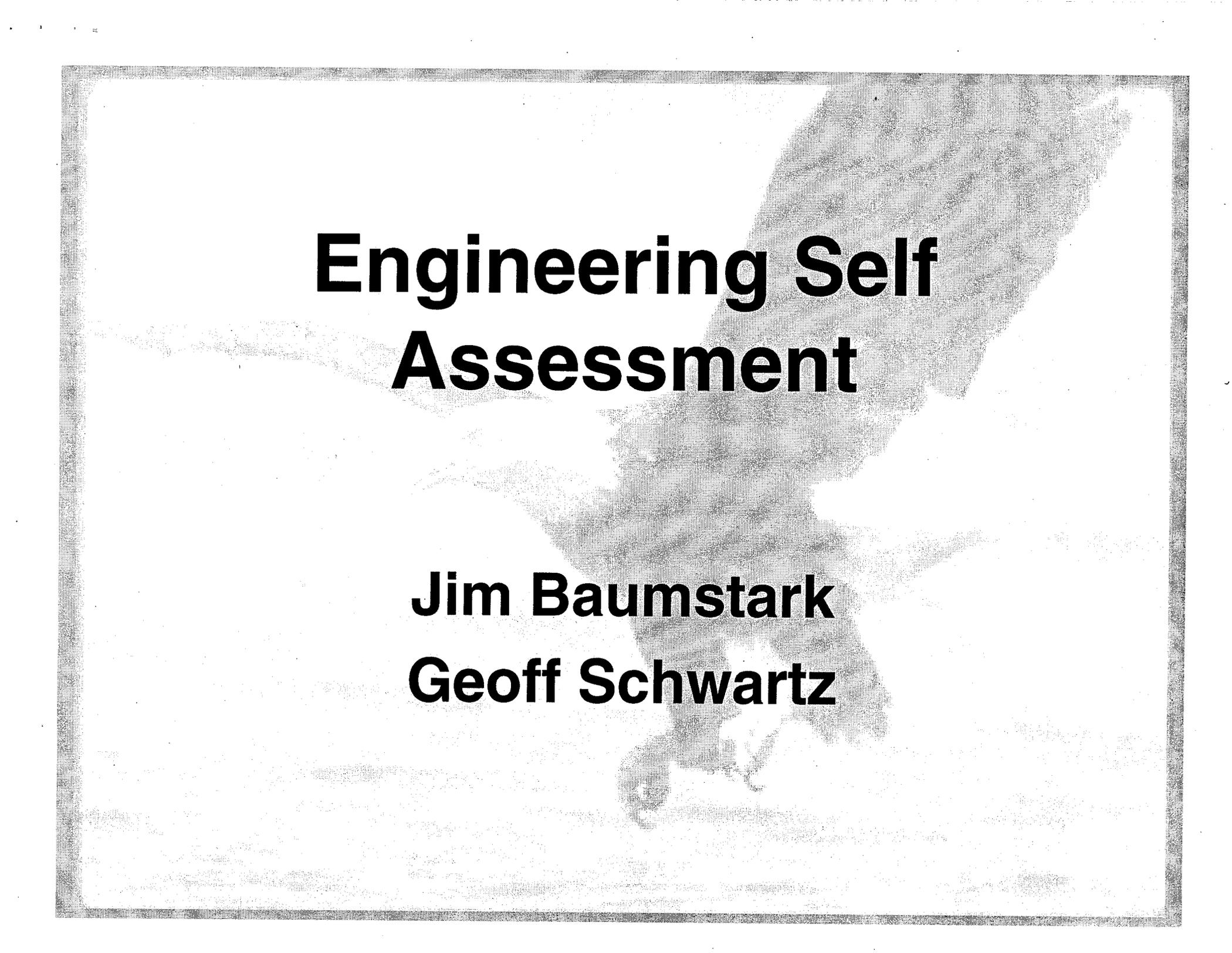
# **Indian Point 2 Engineering Status**

**NRC - Con Edison**

**October 25, 2000**

# Scope of Presentation

- **Engineering Self Assessment**      **Jim Baumstark**  
**Geoff Schwartz**
- **AFW SSFA**      **Peter DeStefano**
- **Utility Tunnel Assessment**      **Pat O'Brien**
- **System Engineering Initiatives**      **Tom McCaffrey**



# **Engineering Self Assessment**

**Jim Baumstark**

**Geoff Schwartz**

# **Engineering Self Assessment (ESA)**

- **Conducted July 24 – 28, 2000**
- **Ten Member Team, Con Edison & Industry Personnel**
- **Focused on Three Specific Areas**
  - **Engineering Work Quality**
  - **Availability/Use of Design and Licensing Basis Information**
  - **Organizational Coordination and Communication**

# Summary

- **Identified Strengths and Weaknesses**
- **Cross Cutting Issues**
- **Process Improvements Should Be Accelerated**

# **Engineering Work Quality**

- **Key Strengths Identified**
  - **Safety Evaluation Process Improvements**
  - **Corrective Action Group Review of CR Response Quality**
  - **Project File Review Team Process**
  - **Root Cause Evaluations**
  - **SNSC/CARB Quality Checks**

# Engineering Work Quality

- **Key Weaknesses Identified**
  - **Performance Indicators do not Adequately Measure Quality**
  - **Insufficient Feedback Mechanisms**
  - **Internal Design Review not Fully Effective**
  - **Safety Evaluation Level of Detail**

# **Availability & Use of Design and Licensing Basis Information**

- **Key Strengths Identified**
  - **Accuracy and Completeness in UFSAR and DBD Work**
  - **Good UFSAR Progress**
  - **Electronic Availability of UFSAR and DBDs**

# **Availability & Use of Design and Licensing Basis Information**

- **Key Weaknesses Identified**
  - **Ownership / Accountability for Design Information**
  - **Configuration Control for Some Design Information**
  - **Measures for Ongoing Maintenance of UFSAR and DBDs**
  - **Sensitivity to Impacts on Design and Licensing Basis**

# **Organizational Coordination and Communications**

- **Key Strengths Identified**
  - **Interface Agreement Documents**
  - **Strong Willingness to Engage in Constructive Dialogue**
  - **Plant Engineering Effectiveness**

# **Organizational Coordination and Communications**

- **Key Weaknesses Identified**
  - **Unclear Roles and Responsibilities**
  - **Processes Based on “Handoffs”**
  - **Ineffective Work Management Process**

# **Cross Cutting Issues**

- **Leadership**
- **Management Modus Operandi**
- **Sense of Urgency to Improve / Ownership**
- **Change Management**
- **Personnel Issues**

# **Follow-Up Action**

- **Leadership Team Off-Site on August 28 and 29, 2000**
- **Off-Site Meeting Scheduled for October 31, 2000**

# **Follow Up – Corrective Actions**

- **Specific Weaknesses and Cross-Cutting Issues Align With Strategic Focus Areas**
  - **Fundamentals and Standards**
  - **Product Quality**
  - **Organization and Resources**
  - **Work Management**
- **Issues Prioritized, Corrective Actions Scheduled and Being Managed**

# **Follow Up – Corrective Actions Examples**

- **Near-term (Now and Next Few Months)**
  - **Leadership/Expectations**
  - **Safety Evaluations/Performance Indicators**
  - **Design/Licensing Basis Ownership, Accountability, Sensitivity**
  - **Roles and Responsibilities**

# **Follow Up – Corrective Actions Examples**

- **Longer-term (Next Year and Beyond)**
  - **Change Management**
  - **Personnel Issues**
  - **Engineering Product Quality**
  - **UFSAR, DBD Maintenance**



# **Auxiliary Feedwater Safety System Functional Assessment**

**Peter DeStefano**

# **Auxiliary Feedwater System Safety System Functional Assessment**

- **Conducted in February 2000 – Three-Fold Purpose**
- **Team of Contracted Experts and Con Ed Personnel**
- **Emphasis on Confirming Functionality**
- **Review of Design, Operational and Maintenance Records**
- **Field Inspection**

# Assessment Activities

- **Operational Focus**
- **NFSC Oversight**
- **Risk Insights**

# Major Conclusions

- **No Conditions Identified that Would Defeat AFW Ability to Perform Intended Safety Functions**
- **FSAR Verification Program Comprehensive**
- **AFW Risk Ranking Consistent**
- **Corrective Action Effectiveness**

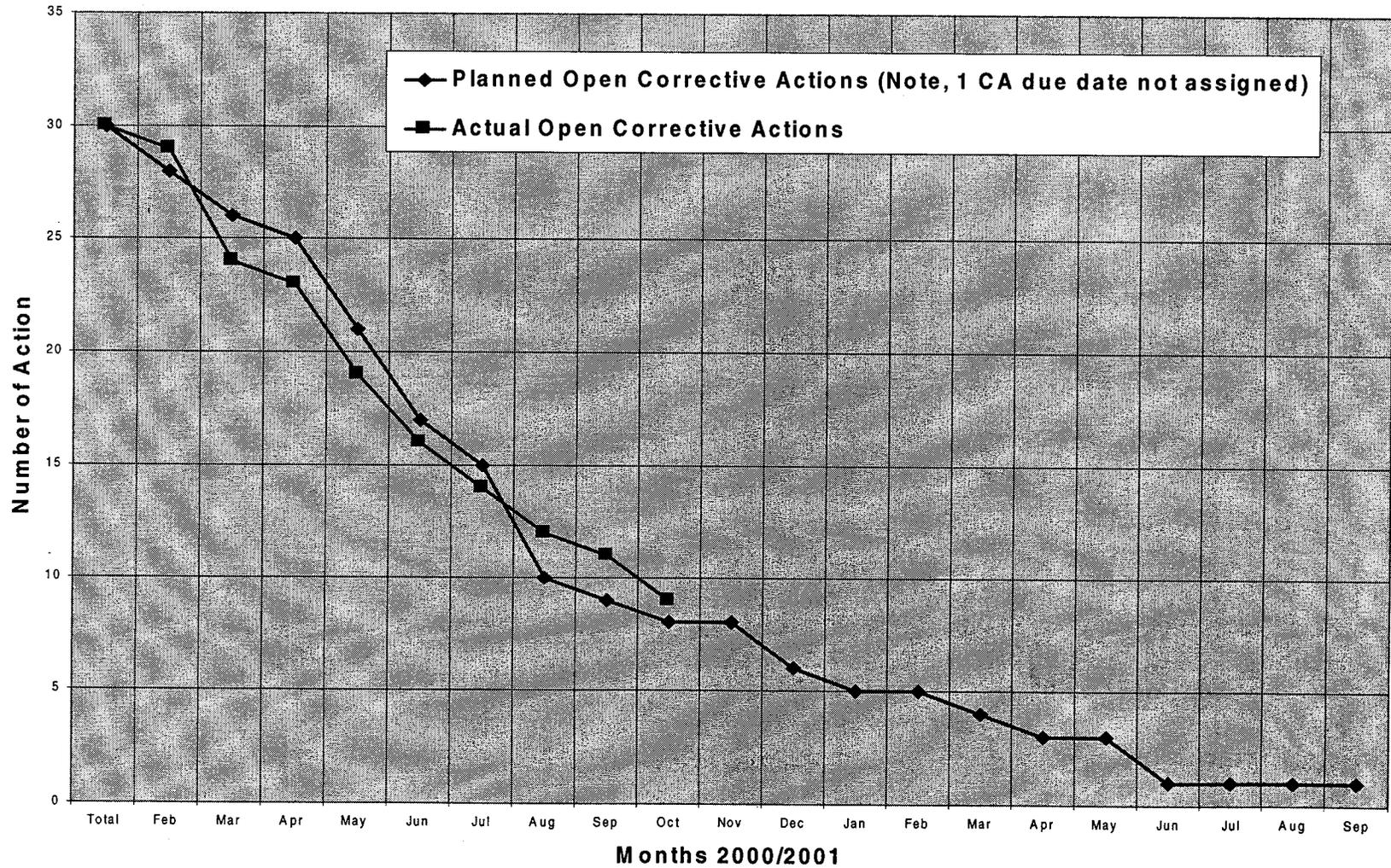
# Findings

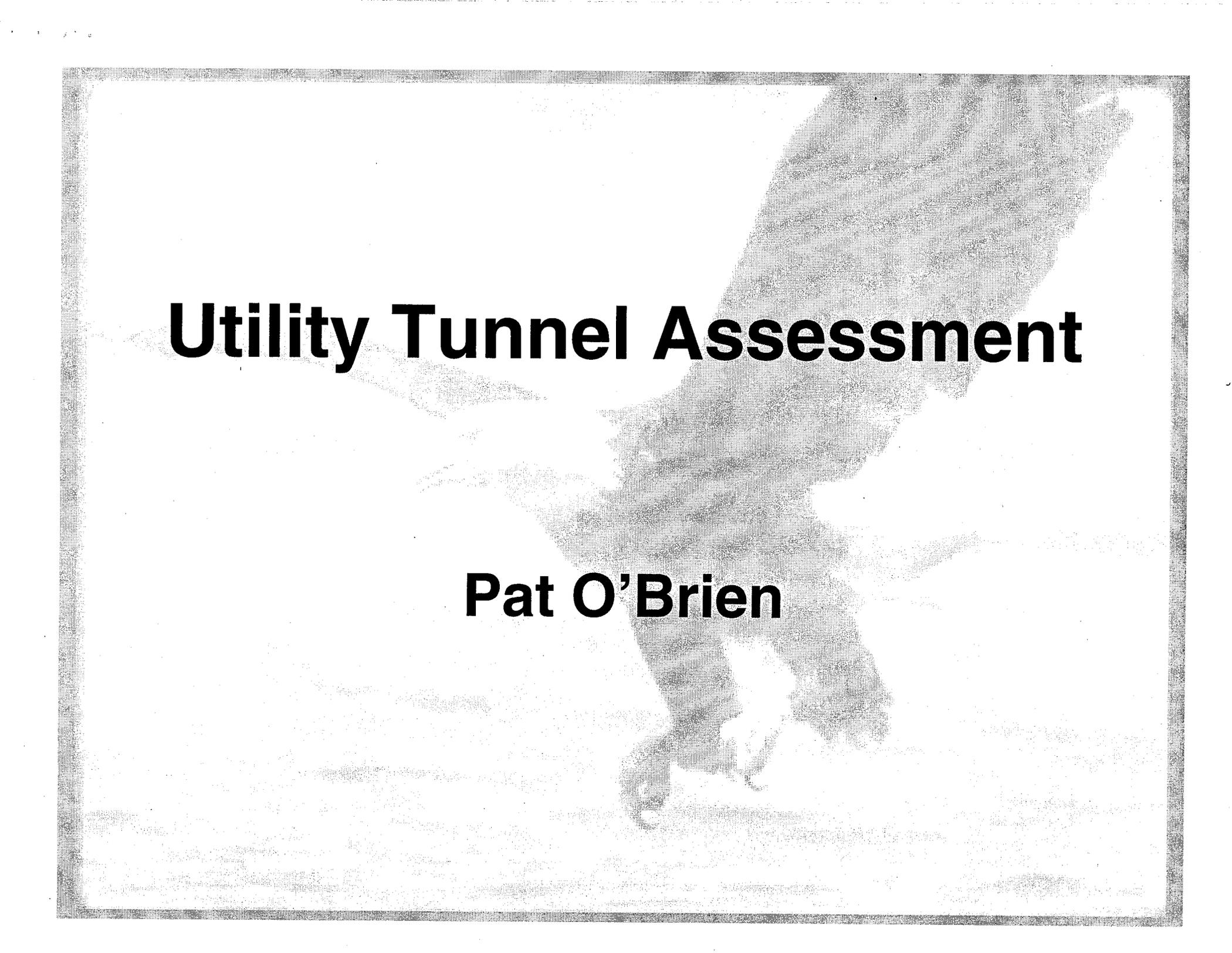
- **Calculations**
- **Engineering/Plant Information Gaps**
- **Corrective Action Effectiveness**
- **ISI/IST Boundary Designation**

# **Condition Report Status Open Items**

- **31 Corrective Actions  
Generated**
- **21 Closed**

# AFW SSFA Condition Report Corrective Actions





# **Utility Tunnel Assessment**

**Pat O'Brien**

# Unit 1 Utility Tunnel

- **Material Condition Assessment**
- **Structural**
- **Piping**
- **Electrical**

# **Evaluation of Safety Significance**

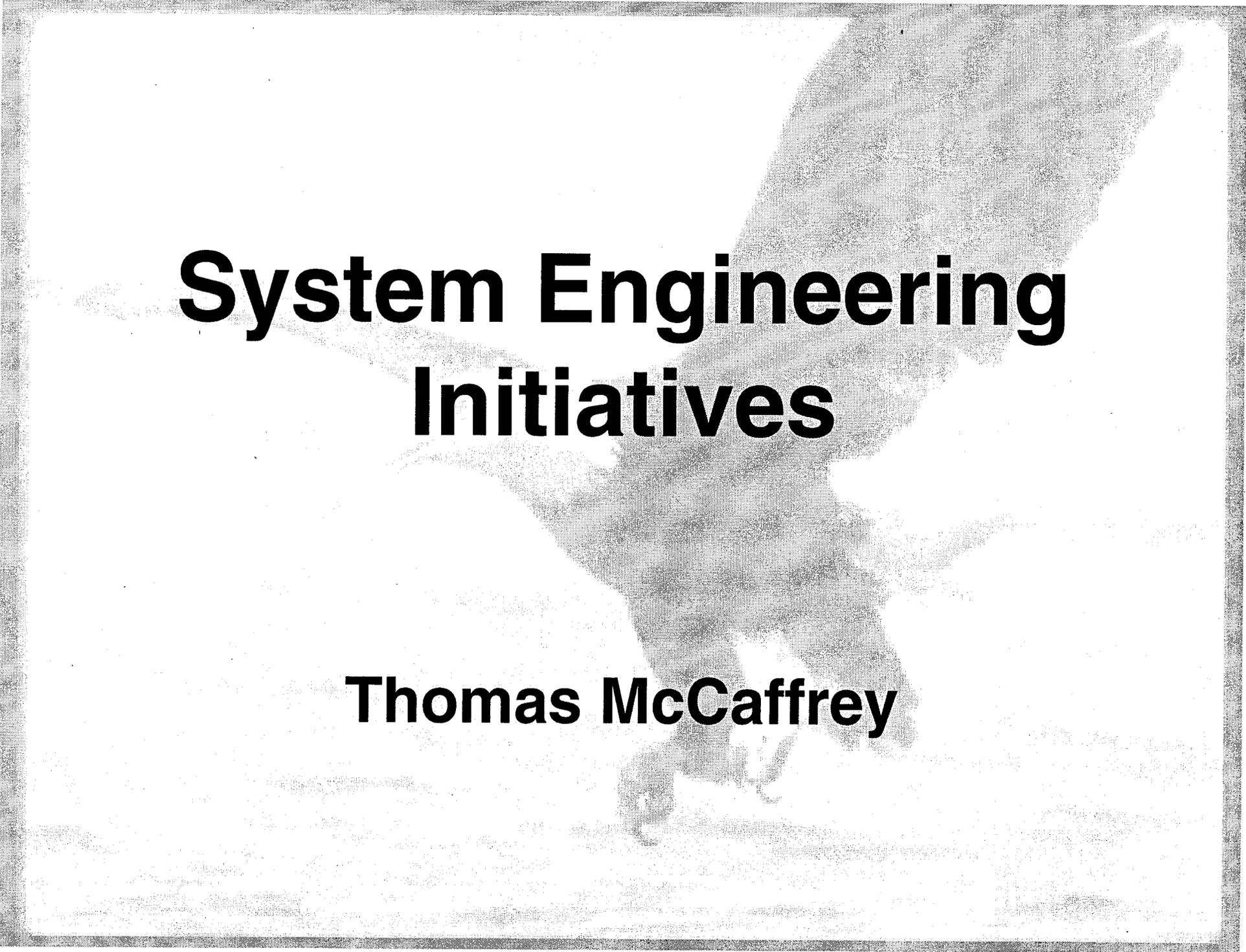
- **Risk Input from Two Tunnel Systems**
  - **13.8 kV Feeders**
  - **High Pressure Fire Water**
- **No Contribution to Initiating Events**
- **Both Very Low Risk Impact**

# **Corrective Action Plan Near Term**

- **Tunnel Structure**
  - **Grout Injection**
- **Piping**
  - **Replace Section of Fire Water Piping**
  - **Replace Degraded Piping Supports**

# **Corrective Action Plan Longer Term**

- **Electrical**
  - **Prioritized Replacement of Conduit, Cable and Supports**
- **Mechanical**
  - **Prioritized Replacement of Piping and Supports**
- **Tunnel Preservation**



# **System Engineering Initiatives**

**Thomas McCaffrey**

# **System Engineering Initiatives**

- **Resource Improvements**
  - Increased Number of Engineers
  - Developed Roles and Responsibilities Document
- **Developed Qualification Guides**
  - For Specific Tasks
  - For Each Risk Significant System
- **Developed System Notebooks**

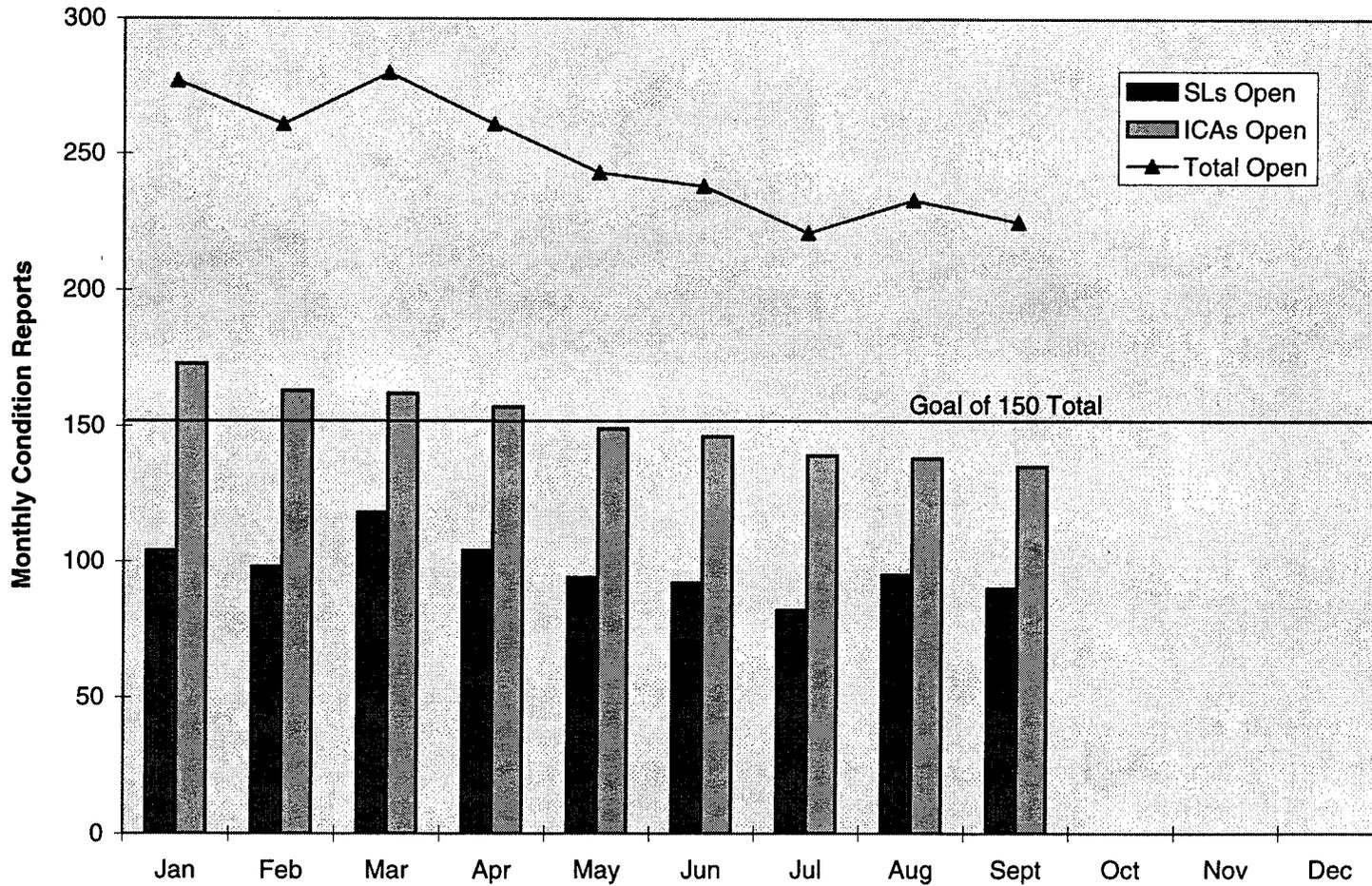
# **System Engineering Initiatives**

- **Developed System Engineering Handbook**
- **Developed System Monitoring Program Based on EPRI Model**
- **Redesigned System Health Program**
- **Equipment Reliability Assessment Based on INPO Standard**

# **System Engineering Improvements**

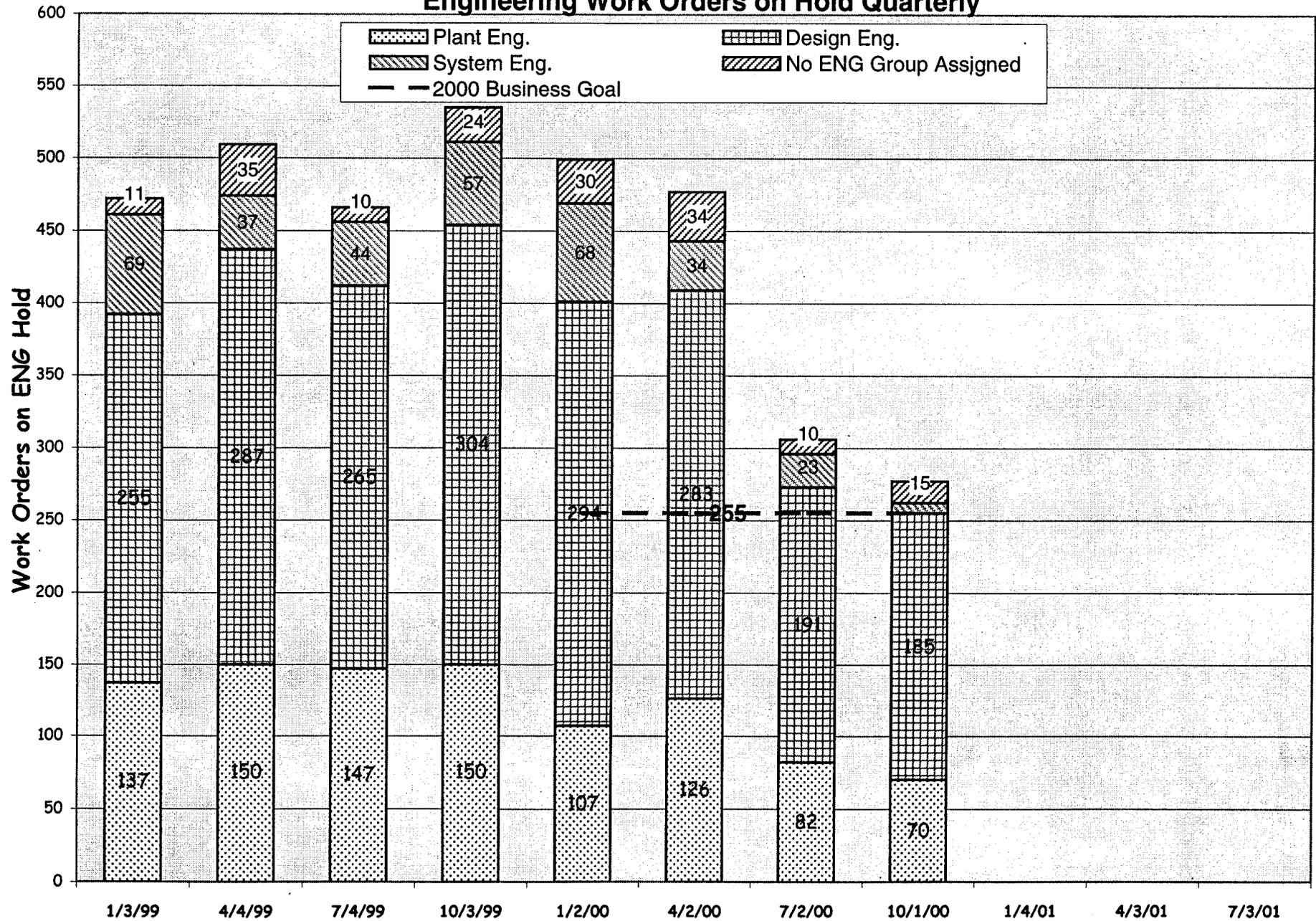
- **Reduction in Corrective Action Backlog**
- **Reduction in System Engineering Work Order Backlog**
- **Increased Focus on System Knowledge**

**SITE ENGINEERING  
Condition Report Status - 2000**



Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
SLs Open	104	98	118	104	94	92	82	95	90			
ICAs Open	173	163	162	157	149	146	139	138	135			
Total Open	277	261	280	261	243	238	221	233	225			

## Engineering Work Orders on Hold Quarterly



Totals	472	509	466	535	499	477	306	277		
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# **Current System Health Guidelines**

- **System Health Reports**
  - Quarterly - Risk Significance
  - Annual - Non-risk Significance
- **Focus on How Deficient Items Affect Plant Systems and Risk Significance**
- **Reports Color-Coded Based on System Performance**

# **Current System Health**

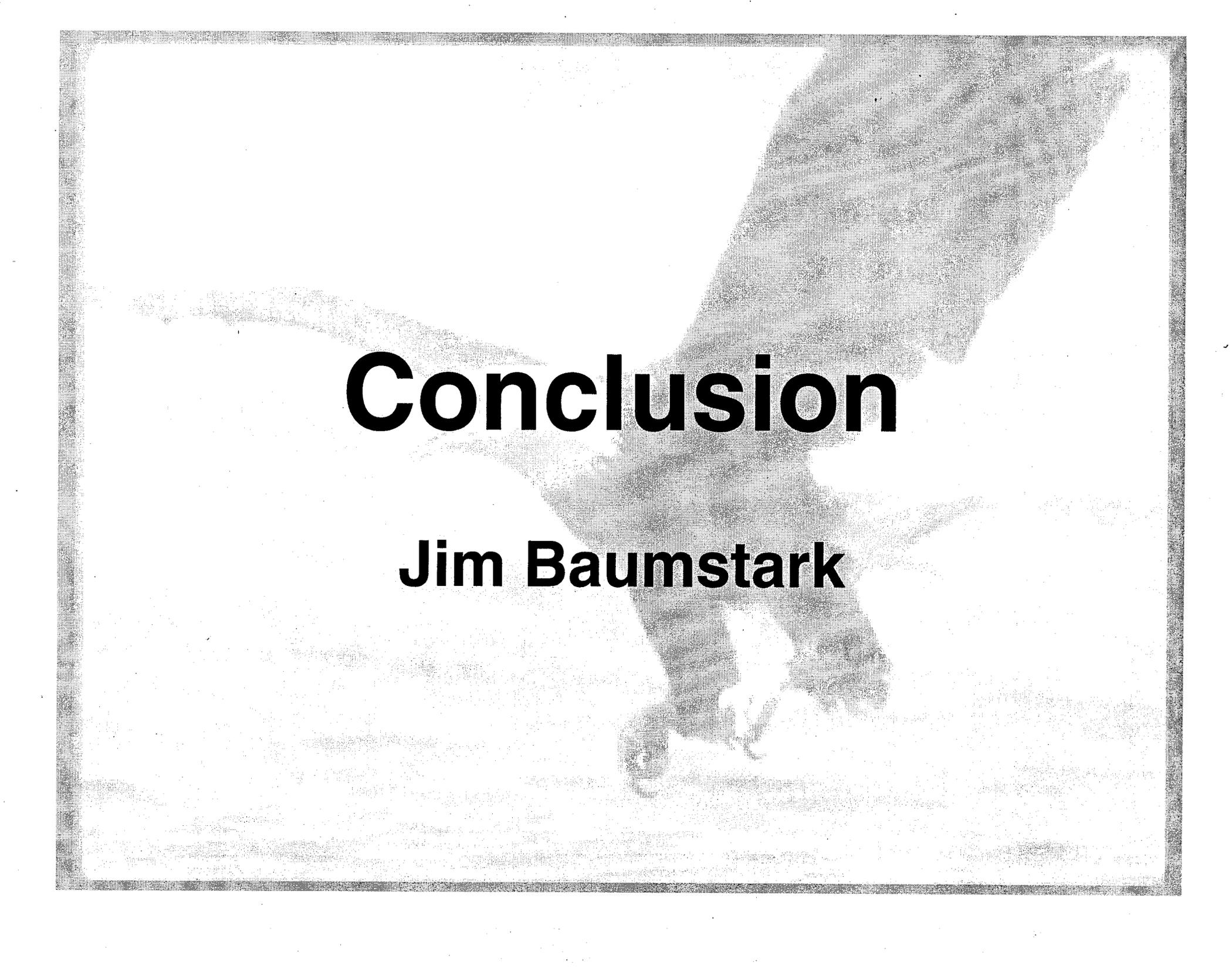
- **Maintenance Rule**
  - **11 Out of 42 Risk Significant Systems in (a)(1) Status**
  - **4 Out of 38 Non-Risk Significant Systems in (a)(1) Status**

# **Current System Health**

- **12 Systems Require Increased Focus**
  - **11 Maintenance Rule (a)(1) Status**
  - **1 System Showing Declining Trend**

# **System Health / Readiness**

- **Near Term Action Plan**
  - **Complete System Walkdowns**
  - **Complete System Health / Readiness Reviews**

A black and white photograph of a hand holding a pen, with the text 'Conclusion' overlaid in the center. The hand is positioned diagonally across the frame, with the pen pointing towards the bottom right. The background is a light, textured surface.

# **Conclusion**

**Jim Baumstark**