Public

~~IE-01~~

May 27, 1997

Mr. J. S. Perry
Site Vice President
Dresden Station
Commonwealth Edison Company
6500 North Dresden Road
Morris, IL 60450

SUBJECT: DRESDEN CONFIRMATORY ACTION LETTER MEETING

Dear Mr. Perry:

This refers to the meeting conducted at the Training Center and the Dresden Nuclear Power Station in Morris, Illinois on May 12, 1997. This meeting was to discuss the status of your actions related to the NRC Confirmatory Action Letter (CAL) No. RIII-96-016.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures (the agenda and handouts provided by your staff at the meeting) will be placed in the NRC's Public Document Room.

We appreciate your cooperation in this matter. If you have any questions regarding this meeting, please contact me at 630/829-9633.

Sincerely,

/s/ W. J. Kropp

Wayne J. Kropp, Chief
Reactor Projects Branch 1

Docket No. 50-237
Docket No. 50-249

IE36

Enclosures:
1. Attendance List
2. Licensee Presentation, Dresden Station Presentation to NRC on Status of CAL Action Items

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NAME	Lerch/co		Kropp					
DATE	05/27/97		05/27/97					

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cc w/encl: T. J. Maiman, Senior Vice President
Nuclear Operations Division
D. A. Sager, Vice President,
Generation Support
H. W. Keiser, Chief Nuclear
Operating Officer
T. Nauman, Station Manager Unit 1
M. Heffley, Station Manager Units 2 and 3
F. Spangenberg, Regulatory Assurance
Manager
I. Johnson, Acting Nuclear
Regulatory Services Manager
Richard Hubbard
Nathan Schloss, Economist
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Enclosure 1

ATTENDANCE LIST

Commonwealth Edison (ComEd)

Dresden Station

J. S. Perry, Site Vice President
R. D. Freeman, Site Engineering Manager
J. M. Heffley, Units 2 and 3 Station Manager
D. Winchester, Site Quality Verification Manager
F. A. Spangenberg, Regulatory Assurance Manager
J. R. Basak, Engineering Assistance Group Manager
R. Scott, Independent Safety Evaluation Group
E. Connell III, Design Engineering Superintendent

Corporate Office

H. W. Keiser, COMED Chief Nuclear Officer
E. R. Netzel, Supplier Evaluation Services Director
R. Renuart, Configuration Management and Engineering Assurance

Nuclear Regulatory Commission (NRC)

A. B. Beach, Regional Administrator, Region III
G. E. Grant, Director, Division of Reactor Safety (DRS), RIII
R. A. Capra, Director, Project Directorate III-1, NRR
J. A. Grobe, Deputy Director, Division of Reactor Safety, RIII
J. A. Gavula, Acting Chief, DRS, Engineering Specialists Branch 1, RIII
G. M. Hausman, Reactor Inspector, DRS, RIII
W. J. Kropp, Chief, DRP, Branch 1, RIII
D. E. Roth, Resident Inspector, Dresden

ENCLOSURE 2

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Dresden Station Presentation To NRC on Status of CAL Action Items

May 12, 1997

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AGENDA

Russell Freeman	-	Introduction / Opening Remarks
Joseph Basak	-	Dresden Engineering Assurance Group (DEAG) Recent Activity
	-	DEAG Effectiveness Corrective Action Record (CAR)
	-	Effectiveness of DEAG Review of Safety Evaluation
Edward Connell	-	Design Basis Initiative Program
Carl Richards	-	Results of Dresden Engineering Audit
	-	Engineering Audits Common Issues and Trends
Edward Netzel	-	Scope and Findings of the Westinghouse and Duke Engineering Audits
Robert Renuart	-	Expanded S&L Audit
	-	ComEd Follow-up to the Duke Audit
Russell Freeman	-	Closing Remarks
	-	Commitments And Current Schedule
All	-	Open Discussion

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Engineering

R. D. Freeman

Site Engineering Manager

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Dresden Engineering Assurance Group

Joe Basak

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DEAG Activities

- 42 Engineering Products Reviewed

17 Safety Evaluations	9 Comments	1 PIF
14 Operability Assessments	2 Comments	
6 Calculations	3 Comments	2 PIF's
1 Design Change	Acceptable	
1 Temporary Alteration	Acceptable	
3 Other	1 Comment	

- Comments on 15-3 PIF's initiated, others being trended

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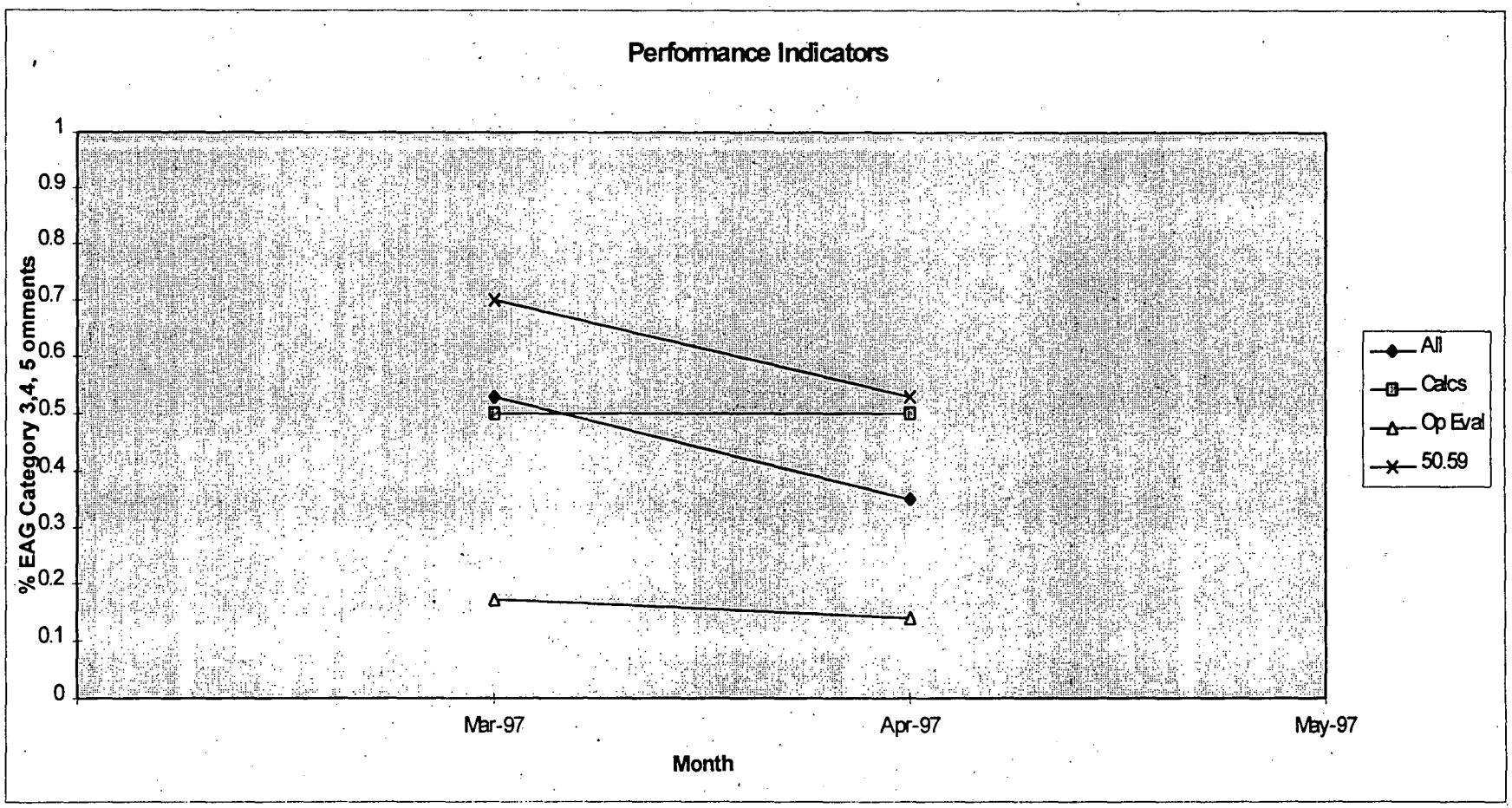
DEAG Status



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DEAG Status (continued)

DEAG Effectiveness -

- SQV Unresolved Item (CAR 12-97-039)
- Initiation of PIF's (CAR 12-97-030)
- Increase review of Calculations - Sample On Site/Vendor - all disciplines
- Operability Evaluations - No Technical Issues in SQV Audit

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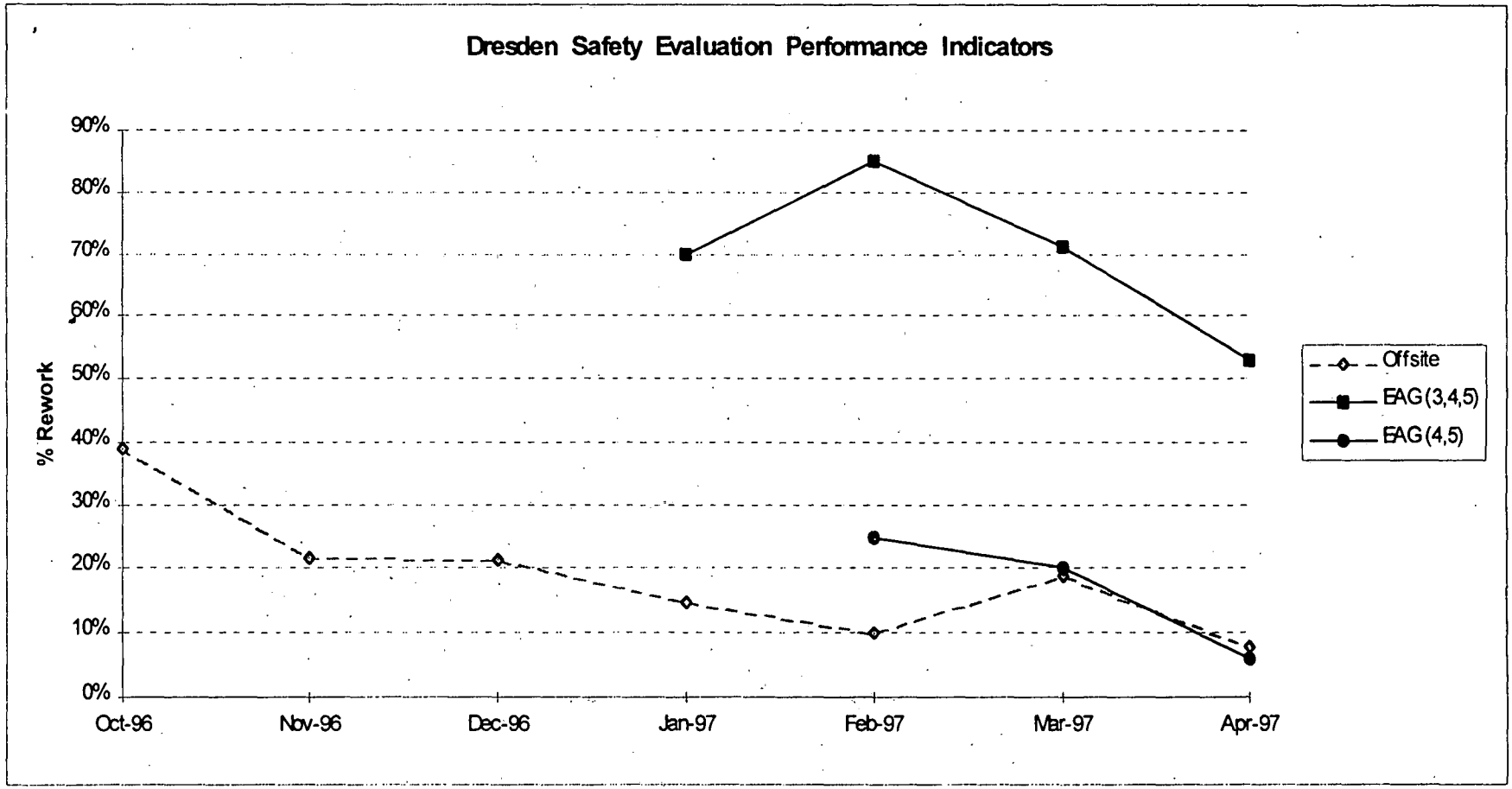
Safety Evaluations



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Safety Evaluations

Performance Indicators

- DEAG Assessment

  % of Category 3, 4 and 5

- Offsite Assessment

  % of Unacceptables in 6 categories

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Design Engineering CAL Actions

E. C. Connell, III

Design Engineering Superintendent

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Design Basis Initiative

Remaining Dresden 1997 Commitments

- Design Basis and Calculation Validation for 6 Risk Significant Systems
- Validation of DBDs For These Systems
- Review of Existing DBDs Against UFSAR Requirements

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Design Basis Initiative

6 Systems Selected For Design Basis & Calculation Validation

- Safety Related 125/250 VDC
- Low Pressure Core Injection System (LPCI)
- Containment Cooling Service Water (CCSW)
- Turbine Building Closed Cooling Water (TBCCW)
- Service Water (SW)
- Emergency Core Cooling System (ECCS) Initiation Logic

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Design Basis Initiative

Design Basis & Calculation Validation for 6 Systems

- Identify Licensing Commitments In The UFSAR, TS, SERs and DATR
- Capture and Link The Commitments In DBdb to SSC
- Validate Each Design Basis Commitment Through a Spec, Calc, Procedure Or A Program
- Update Associated DBD as Necessary
- Revise/Create Required Calc, Procedure Or Program, If Required

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Design Basis Initiative
DBD Validation For The 6 Systems

- Validate The Following Three System DBDs in 1997
  - Safety Related 125/250 VDC
  - Low Pressure Core Injection (LPCI)
  - Containment Cooling Service Water (CCSW)
- No Existing DBDs For The Following Three Systems
  - Service Water (SW)
  - Turbine Building Closed Cooling Water (TBCCW)
  - Emergency Core Cooling System (ECCS) Initiation Logic

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Design Basis Initiative

Revision & Creation of Calculations

- 40 Calculation Revision/Creation Has Been Identified During Key Parameter Review
- Revise/Create 23 Calculations Pertaining To The 6 Systems Being Validated, With The Remaining 17 Calculations To Be Started in 1998
- Calculations Will Be Reviewed and Accepted By ComEd

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Design Basis Initiative

Existing DBD Review Against UFSAR

- When November 8th Letter Was Issued, Corporate Design Basis Initiative Program Did Not Exist
- DBdb Has Been Developed And Is Being Installed To Capture All The Design Basis Information During UFSAR, TS, SER, DATR, Calculation and Procedure Review
- DBD Review Against UFSAR Will Be Performed After DBdb Is Populated

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Design Control
SQV Audit 12-97-16

Integrated / Shared Resource Audit

Carl Richards

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Team Composition/Experience

- Eight (8) Person Audit Team
  - 4 Technical Specialists (Contractors)
  - 4 ComEd Auditors, All Engineers
- > 100 Years of Combined Engineering Experience (Nuclear)
- > 70 Years Directly Related To Design Activities
- Three (3) Team Members Were Licensed Professional Engineers

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Audit Scope

- Design Process Including:
  - Design Inputs
  - Assumptions
  - Configuration Management
  - Calculation Accuracy
  - Interfaces
- Procedure Adequacy and Adherence
- 10 CFR 50.59's and UFSAR Changes
- Engineering Assurance Group Effectiveness
- Operability Reviews / Determinations
- Corrective Action Effectiveness

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Selection Basis For The Calculations Reviewed

- Selection Based On The Following Concepts:
  - A Portion Would Represent New Modifications, Setpoint Changes, or Other Issues Related To The Pending D3R14 Outage
- They Would Represent A Cross-Section of Old (Pre-I.S.I.) and New (Post-I.S.I. Corrective Action) Calculations
- They Would Represent A Cross-Section of ComEd and Vendor Prepared Calculations

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Audit Preparation & Duration

- Audit Prep Was a Seven Site Effort
- Involved Many Levels of Management Including:
  - SQV Directors
  - Audit Supervisors
  - Lead Auditors with Engineering Disciplines
  - Corporate Nuclear Oversight Input
- Dresden - 3 Week Audit 3/10/97 to 3/27/97

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Audit Preparation & Duration (Continued)

- Audit Results:
  - 5 Level II Findings - One (1) is Specific To Calculations
  - 5 Level III Findings
  - 2 Unresolved Items - Requires Further Review/Monitoring

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Calculations CAR

- Level II Finding #12-97-036
  - 20 calculations reviewed during the audit
  - 12 found with some level of error / weakness
  - 8 of 12 were new calculations (12/1/96 or later)
  - None of the 12 calculations in question resulted in the final product being outside of acceptable tolerances. From a results viewpoint, the calculations were technically correct.

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Summary of Calculations

- 10 calculations prepared by ComEd
- 10 calculations prepared by A/Es
  - Sargent and Lundy(2)
  - Duke Engineering Services (4)
  - Vectra (3)
  - Pacific Nuclear (1)
- Calculation concerns were rated on a scale of 0 to 5 (with 5 being the most significant)
  - 10 category 0 & 1 concerns (Admin or editorial error)
  - 1 category 2 concern (Potential to erode the design margin)
  - 1 category 3 concern (Design margin eroded)

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Calculation DRE 96-0051

- Prepared by ComEd
- SQV rated as a Category 3 concern
- Topic: Fault current and engineering judgment
- Purpose: Determine acceptable fault current
- Issue: Calculated 10,214 amps. Breaker name plate rated for 10,000 amps. Justification for the acceptability of the additional 214 amps was "engineering judgment" due to losses, impedences, etc.. Numerical values for the losses were not provided within the calculation.

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Calculation DRE 97-0040

- Prepared by ComEd
- SQV rated as a Category 2 concern
- Topic: Seismic qualification for 480V switchgear
- Purpose: Determine if the flexibility of telescoping channels is acceptable
- Issue: Concern dealt with the determination of seismic "g" values. The flexibility of the channels was not calculated. An EPRI letter dealing with the channels was not referenced in the calculation, and was not provided as justification for the calculation result.

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Summary

- Calculation issues revolved around problems with the documentation of assumptions and administrative errors
- Process corrective actions as a result of previously identified issues have not been completely effective
- No calculations were invalidated or determined to be technically incorrect.

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Supplier Evaluation Services

E. R. Netzel

Supplier Evaluation Services Director

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Westinghouse Audit (Columbia)

- Scope: 14 Calculations
  - Engineering review package and calculations for axial repositioning of wet annular burnable absorbers
  - Secondary source design reports for Braidwood and Zion
  - Calculations associated with 17x17 grid design
  - Engineering review and calculations associated with 3-tab inconel grid design
- Results: No calculation issues
  - Transposition error from test report to Engineering review package. Verified final test report was correct

    One Engineering report - Editorial error (corrected immediately)

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Duke Audit

- Scope: 26 Calculations performed by Duke Engineering & Services (including Vectra, Impell & Pacific Nuclear)
  - Spanning three years
  - Population included calculations from five sites

- 9 Mechanical
- 11 Structural
- 4 Electrical
- 2 I & C

- 16 Vectra
- 5 Impell
- 3 DE&S
- 2 Pacific Nuclear

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Duke Audit (Continued)

- Results:
  - 4 - Findings
  - 1 - Unresolved Item (ComEd)
- Issues:
  - Calculations were found to have design control deficiencies
  - Ineffective independent design review
  - Internal audits were programmatic and not effective in identifying technical issues
  - Duke has not incorporated the requirements of the ComEd NEP's in their design procedures

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1997 AE Audits

Bechtel	Offsite	1st Qtr	Complete
	Site(s)	3rd Qtr	
Duke	Offsite	2nd Qtr	Complete
	C/A Follow-up	4th Qtr	
GE (NSSS)	Offsite	3rd Qtr	
	Site(s)	4th Qtr	

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1997 AE Audits (Cont.)

Siemens (Fuel)	Part 1	1st Qtr	Complete
	Part 2	3rd Qtr	
Westinghouse (NSSS)	Offsite	3rd Qtr	
Westinghouse (Fuel)	Part 1	2nd Qtr	Complete
	Part 2	3rd Qtr	
S&L	C/A	2nd Qtr	
	Follow up		

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Corporate Engineering Activities

Bob Renuart

Chief Engineering, Configuration Management and
Engineering Assurance

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S&L Expanded Calc Review

- Reviewed 50 Calcs of a similar type as ComEd Audit

- 20 = No errors
  10 = Category 1 - Editorial
  20 = Category 2 - Include minor computational errors, but no impact on calculation

- Problem Statement
  - Minor Computational errors are precursors to bigger errors

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S&L Expanded Calc Review

- Two trends: Wrote two Trend PIFs
  - 7 Missing formulae for intermediate steps
  - 5 Errors related to Pressure Drop Calcs
- Follow up Actions
  - Revise checklists to pick up editorial, format errors
  - Training on Pressure Drop Calcs with heightened oversight
  - Trend review comments for effectiveness and discovery of other problems

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Duke Engineering & Services Audit Results

- 14 Calculations determined discrepant (None were reviewed by ComEd EAG)
  - (2) Category 3 (potential erosion of design margin)
  - (2) Category 4 (some erosion of design margin)
- Duke is tracking in their Correction Action Program. Six will get root cause evaluations, the remainder will be trended
- Immediate evaluation by Duke was that there were no operability issues - stations also notified in order to allow them to conduct operability assessments
- Duke letters sent to ComEd Site Engineering Managers
- Most significant problems
  - Incorrect/Incomplete design input on a setpoint calc - (Category 4)
  - Using wrong equations in same calculation (one conservative, one nonconservative) somewhat offsetting - (1 Category 4; 1 Category 3)
  - One instance of use of unverified reference as design input - (Category 3)
  - Instance of failure to use NDIT for input - (Category 2)
  - Procedural/format nonconformances - (Category 2)
  - One instance of issuing advanced information prior to completion of substantiating calculation - (Category 2)
  - Lack of clear statements of references and assumptions - (Category 2)

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Duke Engineering & Services Audit Results

- Root cause determination on Duke PIRs may drive further actions - expected complete by May 31.
- Duke immediately performed an overview of a sample of similar calculations
- Duke setting up a more robust overview process
  - Formed Quality Executive Steering Team
  - Implemented Engineering Assurance technical reviews and mentoring
  - Calculation training on lessons learned and good practices scheduled to be complete by end of 2Q97
  - Major revision to DE&S QA program planned to resolve programmatic finding from this audit
- ComEd EA Group Over-viewing future Calculations generated by DE&S