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May 30, 1997

JSPLTR #97-0100

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Subject: Dresden Station Units 2 and 3
Confirmatory Action Letter (CAL) Action Item Update
NRC Docket Nos. 50-237 and 50-249

- Reference:
- (1) NRC Confirmatory Action Letter RIII-96-016, A. Bill Beach to J. S. Perry dated November 21, 1996.
 - (2) J. S. Perry letter of November 8, 1996 to A. Bill Beach NRC Region III
 - (3) T. J. Maiman letter of November 12, 1996 to A. Bill Beach NRC Region III

The purpose of this letter is to provide the monthly update of activities identified in reference (1), and to request closure of this CAL at Dresden Station.

The fifth monthly status meeting was held with the NRC staff at Dresden Station on May 12, 1997. At this meeting, Dresden Engineering Assurance Group (DEAG) activities, the Design Basis Initiative, Site Quality Verification (SQV) engineering audits, and the results of the Duke Engineering and Westinghouse audits were discussed. Attachment 1 provides a summary of the information presented by ComEd at that meeting. As the attachment shows, Dresden Station continues to implement the commitments made in reference (2) and as reiterated in reference (1).

Attachment (2) is a tabular representation of the reference (1) commitments with status provided, including the document in which completion was reported.

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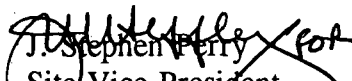
With the completion of the twelve system parameter review (attachment 2, item 4), the last major action is complete, leaving only the ongoing activities (attachment 2, items 5, 6, 8, and 11). Of these, the effectiveness of the (DEAG) and the corrective actions of the Audits of NSSS and AE vendors appear to be the remaining items which require closure.

Attachment (3) provides a record of DEAG activities performed since inception. Clearly, the DEAG has been effective at identifying shortcomings in the Engineering documentation listed and, as shown on the graphic, has had a positive impact in the area of 59.59s.

Attachment (4) provides a record of audit activities conducted by ComEd in response to the Dresden ISI. The types of deficiencies found appear to be similar across all audits conducted. To date, there have been no deficiencies which required modification to the plant. However, there have been items which required changes to existing calculation.

Supported by the information provided in the attachment, we propose the CAL be closed at Dresden. If you have any questions concerning this issue, please contact Mr. Russell Freeman, Dresden Station Site Engineering Manger, at (815) 942-2920, ext. 3700.

Sincerely,


J. Stephen Perry
Site Vice President
Dresden Station

Attachment: (1) Summary of Presentation at May 12, 1997 Meeting
(2) CAL Commitment Status
(3) Associated CAL Commitment Status
(4) Summary of DEAG Activity
(5) Summary of AE/NSSS Audit Results

cc: A. Bill Beach, Administrator USNRC Region III
J. F. Stang, Project Manager, NRR
D. Roth Acting Senior Resident Inspector, Dresden Station
Office of Nuclear Facility Safety - IDNS

ATTACHMENT 1
May 12 Meeting Summary

DRESDEN ENGINEERING ASSURANCE GROUP (DEAG) ACTIVITIES

During the month, the group reviewed forty-two engineering products which included seventeen safety evaluations, fourteen operability assessments, and six calculations. Fifteen of these required rework and three Performance Improvement Forms (PIF) were written. While providing only two data points, March and April, the amount of rework from DEAG comments on the engineering products reviewed is declining.

During the site engineering audit, SQV conducted a review of DEAG activity. Based on this, SQV initiated two Corrective Action Records (CAR). The first CAR is an unresolved item for SQV to further assess the DEAG effectiveness because insufficient evidence was gathered in the initial audit. The second CAR found that PIFs generated by the DEAG were not processed in a timely manner. The DEAG is now formally tracking the PIFs generated as a result of their reviews.

Based upon the results of DEAG review and various SQV audits, the DEAG will increase its review of calculations to include a sampling of on-site and vendor calculations by various disciplines. Previously, the DEAG reviewed calculations, such as setpoint calculations, and may not have reviewed the implementing documents. In the future, the DEAG will also review the implementing documents. SQV will also provide oversight of this activity.

Currently, the DEAG reviews all safety evaluations but not all 50.59 screenings. Screenings are reviewed as a part of an engineering package such as design changes or procedure changes.

DESIGN BASIS INITIATIVE

The following commitments remain to be completed in 1997, as outlined in Ref. 2:

- Design Basis and Calculation Validation for 6 systems
- Validation of Design Basis Documents (DBD) for these 6 systems
- Review of existing DBDs against Updated Final Safety Analysis Report (UFSAR)

ATTACHMENT 1
May 12 Meeting Summary

6 System validation & reconstitution

The following 6 systems were selected, predominantly based on the Risk Achievement Worth (RAW) score, to be validated in 1997.

1. Safety related 125 & 250 VDC systems
2. Low Pressure Coolant Injection (LPCI) Systems
3. Containment Cooling Service Water (CCSW)
4. Turbine Building Closed Cooling Water (TBCCW)
5. Service Water (SW)
6. Emergency Core Cooling System (ECCS) initiation logic

In the performance of the Design Basis and Calculation Validation, the following activities will be conducted for the above systems:

- Identify licensing commitments in the UFSAR, Technical Specification, Safety Evaluation Reports (SER), and Dresden Administrative Technical Requirements (DATR).
- Capture and link the commitments in the Design Basis Database (DBdb) to Safety Systems, Structures, and Components (SSC).
- Validate each Design Basis Commitment through a specification, calculation, procedure, or program.
- Validate and update associated DBD for each system as necessary.
- Revise or create the appropriate calculations, procedures, or programs if required. The DBDs for 125 & 250 VDC systems, LPCI, and CCSW will be validated this year. DBDs do not exist for SW, TBCCW, and ECCS initiation logic. The Feedwater DBD will be updated to include risk significant components of TBCCW and SW along with the Feedwater system validation in 1998. The ECCS Initiation Logic does not require a separate DBD since the ECCS subsystems have their individual DBDs.

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May 12 Meeting Summary

Revision or Creation of Calculations

During the Key Parameter Review completed in February 1997, the need for forty new or revised calculation revisions or creations was identified. Twenty-three of these apply to the six systems previously listed and will be completed this year. The remaining seventeen calculations will be performed when the remaining systems are validated in 1998. The calculations created or revised during this validation effort will be reviewed and accepted by ComEd.

Existing DBD Review Against the UFSAR

The review of existing DBDs against the UFSAR is being conducted as part of the Corporate Design Basis Initiative (DBI) Program. Development of the Design Basis Database (DBdb) is part of this initiative. This data base will capture all the design basis information found during the review of the UFSAR, SERs, DATR, Technical Specifications, calculations, and procedure review. The DBD review against the UFSAR will be performed in parallel with the population of this data base. The schedule for completion of this activity is now tied to the DBI Program. This is a change from the schedule provided in reference (2). The Corporate Design Basis Initiative and the DBdb did not exist when reference (2) was transmitted.

SQV DESIGN CONTROL AUDIT

Design Control Audit 12-97-16 was conducted at Dresden Station from March 10, 1997 through March 27, 1997. This was one of a series of audits conducted at the ComEd nuclear facilities. These audits were prepared by the SQV Directors, Audit Supervisors, lead auditors with engineering experience, and input from Corporate Nuclear Oversight. The Dresden audit team consisted of four contracted technical specialists and four ComEd SQV personnel with engineering backgrounds. This team had over one hundred years of nuclear engineering experience and more than seventy years of experience directly related to design activities.

ATTACHMENT 1
May 12 Meeting Summary

Audit Scope

The following six areas were part of the audit scope:

- Design Process which including:
 - > Design input
 - > Assumptions
 - > Configuration management
 - > Calculation accuracy
 - > Engineering Department Interfaces
- Procedure adequacy and adherence
- Safety Evaluations (50.59s) and UFSAR changes
- DEAG effectiveness
- Operability Evaluations
- Corrective action effectiveness

Basis for Selection of Calculations Examined during the Audit

In view of the number of problems found with calculations during the Independent Safety Inspection (ISI) at Dresden and subsequent SQV audits of Architect Engineers, considerable thought was given to the selection of calculations to be examined during the audit. Specifically, part of the calculations would come from modifications or setpoint changes planned for the current Dresden Unit 3 refueling outage D3R14. Some calculations were performed prior to the ISI and others performed following corrective actions instituted following the ISI. Finally, both ComEd and vendor prepared calculations were included.

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May 12 Meeting Summary

Audit Results

There were ten SQV identified Corrective Action Records (CAR's) and two unresolved items during the audit. The title and severity level within the SQV rating system are listed below:

CAR #	Severity Level	Title of Finding
12-97-036	II	Calculation Accuracy, Corrective Action Effectiveness.
12-97-029	II	Set point Change documentation, and supporting 50.59's.
12-97-028	II	Battery Charger Mod. documentation issues (U-3,125 V).
12-97-034	II	Documentation of Qualifications for Engineering Personnel.
12-97-035	II	Configuration Management (I.D. & Tracking of UFSAR and DATR changes)
12-97-033	III	Fuse Control Program Ownership.
12-97-019	III	Documentation of Operability Determinations.
12-97-031	III	Implementation of new NSWSP procedure for 50.59's reviews.
12-97-030	III	DEAG PIF initiation weaknesses.
12-97-027	III	Pending UFSAR files/binders-Record Control.

ATTACHMENT 1
May 12 Meeting Summary

12-97-039	URI	SQV could not determine DEAG effectiveness due to limited products overviewed by SQV in the audit.
12-97-040	URI	More SQV review required for 50.54f letter items.

During the examination of the twenty calculations, twelve were found to have some level of error or weakness (SQV CAR 12-97-036). Ten errors were identified as a level 0 or 1. One was evaluated as level 2, and another as a level 3. The levels are defined in the table below:

<u>Level</u>	<u>Description</u>
0	Editorial
1	No Impact on Design
2	Potential Impact on Design
3	Design Margin Eroded
4	Design Margin Exceeded

The level 2 deficiency involved ComEd calculation DRE 97-0040 performed to determine the seismic qualification of a 480 volt switchgear involving the flexibility of switchgear telescoping channels. It appeared that the flexibility of the channels impact on the seismic performance was not adequately documented within the calculation.

The level 3 deficiency involved ComEd calculation DRE 96-0051 performed to determine acceptable breaker fault current. A calculated fault current of 10,214 amperes was found acceptable for a breaker with a nameplate rating of 10,000 amperes. Justification on the basis of engineering judgement was not quantified or documented adequately within the calculation.

The following conclusions may be drawn from the audit findings:

- The problem of the calculations were the result of administrative errors and inadequate documentation of assumptions.
- Process corrective actions in response to previously identified problems have not been completely effective.
- No calculations were invalidated nor found to be technically incorrect.

ATTACHMENT 1
May 12 Meeting Summary

VENDOR AUDIT ACTIVITY

Two audits were completed since the meeting in April, Westinghouse Nuclear Fuel Columbia, South Carolina, Facility, and Duke Engineering and Services.

Westinghouse Nuclear Fuel

The audit reviewed nineteen design analyses (calculations, test reports, and design reports) associated with the 17 X 17 fuel. There were several minor administrative errors noted but no calculation issues were identified.

Duke Engineering and Services

The audit examined twenty-six calculations performed over the past three years by the companies acquired by Duke Engineering. In addition to Duke Engineering & Services, these companies included Vectra, Impell, and Pacific Nuclear. The calculations involved all engineering disciplines and applied to five ComEd sites.

The audit made four findings as well as an unresolved item. The findings included:

- Calculations were found to have design control deficiencies.
- The independent design review was ineffective.
- The internal audits were programmatic and were not effective in identifying technical issues.
- Duke Engineering & Services had not incorporated the requirements of ComEd NEPs in their design procedures.

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CORPORATE ENGINEERING ACTIVITY

Duke Engineering & Services Audit Followup

Fourteen calculations were determined to be discrepant. None of these were reviewed by the ComEd EAG. Two were evaluated as level 3 and two others as level 2 (see table above for definitions). Duke is tracking these deficiencies in their corrective action program and will perform a root cause evaluation on six of them. The root cause determinations may trigger future actions. The discrepancies were reviewed by Duke following the audit and no operability issues were found. In addition, Duke reviewed an additional sample of similar calculations. The overview process has been upgraded at Duke to include the following:

- Formed a Quality Executive Steering Team
- Implemented Engineering Technical reviews and mentoring
- Scheduled to complete calculation training on lessons learned and good practices by end of second quarter 1997.
- Planned major revision to Duke Engineering & Services QA Program to resolve programmatic finding from this audit.

ComEd EAG will overview future calculations performed by Duke.

S & L Expanded Review of Calculations

Fifty additional calculations similar to those reviewed in the ComEd audit were reviewed by S & L. Twenty had no errors; ten had only editorial discrepancies, and twenty had minor computational errors which did not affect the final result.

There is concern that these minor errors could be the precursor of more significant calculation deficiencies and for that reason two trend PIFs were written. In seven calculations, formulae were missing for intermediate steps. Five other errors were related to the calculation of pressure drops.

In followup, checklists were revised to assist in the identification of editorial and format errors. Training for pressure drop calculations was upgraded, and oversight of these calculations was increased. Finally, the review comments will be trended for effectiveness and discovery of other problems.

ATTACHMENT 1
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The Schedule of Vendor Audits for 1997

Company	Location	Schedule	Status
Bechtel	Offsite Site(s)	1st Quarter 3rd Quarter	Complete
Duke Corrective Action Followup	Offsite	2nd Quarter 4th Quarter	Complete
GE(NSSS)	Offsite Site(s)	3rd Quarter 4th Quarter	
Siemens	Part 1 Part 2	1st Quarter 3rd Quarter	Complete
Westinghouse (NSSS)	Offsite	3rd Quarter	
Westinghouse (Fuel)	Part 1 Part 2	2nd Quarter 3rd Quarter	Complete
S&L Corrective Action Followup		2nd Quarter	

**ATTACHMENT 2
DRESDEN STATION
CAL COMMITMENT STATUS**

A.B. Beach Letter of November 21, 1996

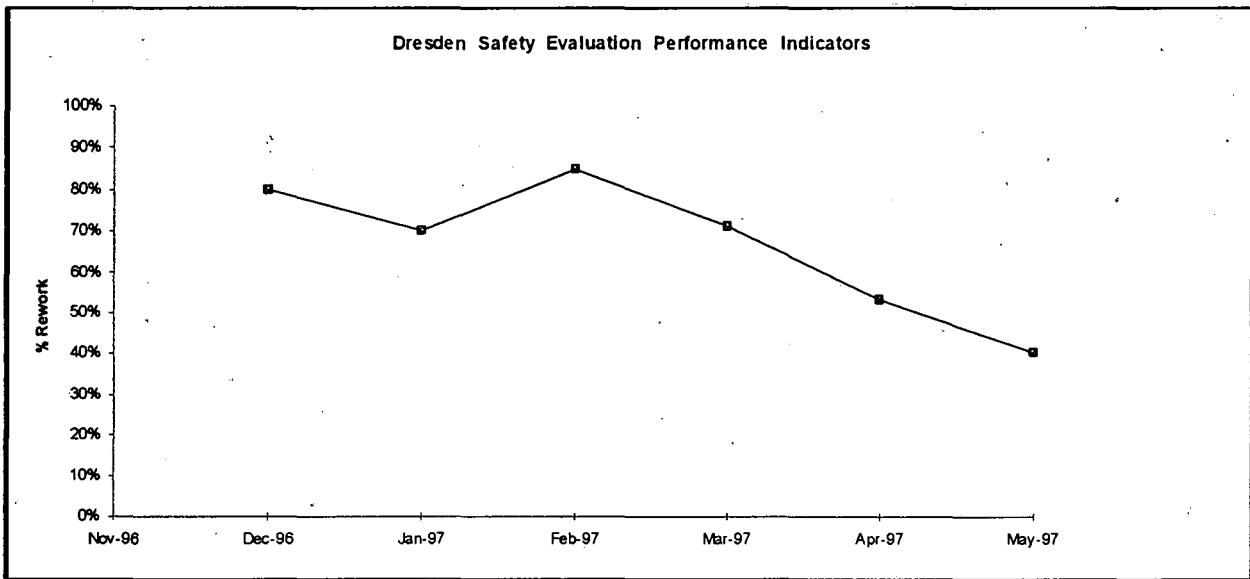
ACTION SPECIFIED	STATUS	REPORTED BY
1. Establish Engineering Assurance Group	Complete	JSPLTR Dec 6, 1996
2. Revise Nuclear Engineering Procedures to provide specific direction when a potential design basis discrepancy is identified	Complete	JSPLTR Feb 7, 1997
3. Revise Nuclear Engineering Procedure to provide clearer guidance for review and update of calculations.	Complete	JSPLTR Dec 6, 1996
4. Screen key parameters of twelve systems most important from a risk perspective	Complete	JSPLTR Feb 28, 1997
5. Validate/reconstitute design basis/calculations for equipment/systems affected by future modifications.	On-going	Monthly CAL Letters
6. Audit NSSS suppliers and Architect/Engineers .	On-going	JSPLTRs Dec 30, 1996 & Feb 7, 1997
7. Detail the membership & background of EAG members, charter, responsibility, EAG Implementing procedures.	Complete	JSPLTR Dec 30, 1996 & Feb 7, 1997
8. Provide results of EAG actions and results to NRC on a monthly basis.	On-going	Monthly CAL Letters
9. Provide results of screening of 12 systems to NRC on a monthly basis.	Complete	JSPLTR Feb 28, 1997

**ATTACHMENT 2
DRESDEN STATION
CAL COMMITMENT STATUS**

ACTION SPECIFIED	STATUS	REPORTED BY
10. Inform NRC if any critical parameters are outside of normal acceptance range.	Complete	JSPLTR Feb 28, 1997
11. Provide schedule and results of NSSS and AE audits on monthly basis	On-going	Monthly CAL Letters

ATTACHMENT 3
SUMMARY OF DEAG ACTIVITIES
(as of 5/23/97)

Documents	Total Number Reviewed	Number with Comments	Number of PIF's
Safety Evaluations	70	42	4
Operability Assessments	46	11	-
Design Change Activities	38	11	2
Calculations	13	7	3
Special Procedures	8	3	-
LER's	6	4	-
Other	18	9	-



**ATTACHMENT 4
AE/NSSS AUDIT RESULTS**

Audit Findings by Level

VENDOR	Engineering Significance Levels*				
	L0	L1	L2	L3	L4
S&L (11/96)	5	4	4	3	0
Bechtel Part 1 (2/97)	7	0	0	0	0
Duke (4/97)	11	10	2	2	0
Westinghouse Fuel Part 1 (4/97)	0	0	0	0	0
Siemens Fuel Part 1 (1/97)	0	0	0	0	0
TOTALS	23	14	6	5	0

* See Attachment 1 Page 6 of 9 for description of levels.

AUDIT FINDINGS BY LEVEL BY VENDOR

