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February 7, 1997

JSPLTR #97-0025

Mr. A. Bill Beach Regional Administrator Region III U. S. Nuclear Regulatory Commission 801 Warrenville Road Lisle, IL 60532-4351

> Dresden Station Units 2 and 3 Confirmatory Action Letter 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)	T. J. Maiman letter to A. Bill Beach dated November 12, 1996.

Dear Mr. Beach:

Subject:

The purpose of this letter is to provide the monthly update of activities identified in reference (1).

The second monthly meeting to provide the status of activities was held at NRC Region III headquarters on January 31, 1997. At this meeting, activity of the Dresden Engineering Assurance Group (DEAG), screening of the twelve system key parameters, Special Site Quality Verification Audits, and Corporate Engineering activity was discussed.

Dresden Engineering Assurance Group (DEAG) Activities

The DEAG is now fully manned, and functional. The group assisted with the determination of Key Parameters being reviewed for the twelve risk significant systems.

The group plans to review the backlog of 10 CFR 50.59 safety evaluations developed for the partially completed modifications, and to review selected modifications planned for completion in the upcoming D3R14 refueling outage.

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The DEAG is working with the Engineering Department to resolve the issue of instrument uncertainty which was raised during the Independent Safety Inspection (ISI).

The group also assisted in the Station response to the "50.54(f)" letter.

Over 30 Engineering Department products have been reviewed to date. The most significant issues include:

The emergency license amendment dealing with the emergency core cooling system (ECCS) suction strainers and containment overpressure.

The High Pressure Coolant Injection System (HPCI) operability close out issues.

Control Room and Technical Support Center (TSC) ventilation system operability issues.

Auxiliary Electrical Room operability issues.

Of the items reviewed, thirteen required some rework for such deficiencies as unverified inputs or omissions. The two most significant items to date for which Performance Improvement forms were initiated are described below:

During review of the ECCS pump net positive suction head (NPSH) safety evaluation, it was determined that the most limiting Peak Clad Temperature (PCT) scenario was not considered. The original analysis assumed the limiting case to be the four low pressure coolant injection system pumps running deadheaded while the core spray pumps were injecting into the vessel. Actually the case with all LPCI pumps cavitating while feeding the line break is the more limiting scenario. This was corrected during preparation of the emergency license amendment. This deficiency was made part of Engineer Support. Personnel Training (ESPT) continuing training at Dresden.

The second item was the discovery that the Turbine Load Reject/ Turbine Trip Bypass Setpoint in TSUP was based on 45% reactor thermal power instead of 45% first stage turbine pressure which had existed since the initial license. This was corrected when the new setpoint was developed.

DEAG has noted that more equipment related PIFs are being written by Engineering Department personnel. Areas for improvement noted by the group is the need to improve intra-discipline communication to prevent omission of relevant information and improved attention to detail to avoid use of unverified inputs.

#### Twelve Risk Significant Systems Key Parameter Screening Status

Screening of the key operating parameters of twelve systems most critical from a risk perspective to verify that calculations exist to support them is on track for completion by February 28, 1997. The NRC will be informed immediately if critical parameters are found to be outside normal acceptance range. The results of the screening will be provided on a monthly basis to the NRC through a meeting and docketed response.

The ten individuals reviewing the parameters are all from outside ComEd and are experienced engineers. The experience ranges from 24 years to over thirty years of experience. The contract individuals are supported by eight senior Dresden engineers from the Design Engineering and System Engineering groups.

The project schedule is slightly behind schedule at this time because it took more time than expected to identify the critical parameters for some of the non-safety related systems included in the list of twelve systems. The verification of the calculations is still expected to complete by February 28, 1997.

Among the twelve systems are four non-safety related systems selected because of their impact on Risk Achievement Worth (RAW). These systems are Feedwater and Condensate, Turbine Building Closed Cooling Water, Service Water, and Off-Site Power Systems. The TBCCW system is required for the feedwater system. The Service Water System supports the TBBCW and thus the feedwater system. The Off-Site Power System supports the 480 and 4KV systems.

The key parameters are defined as critical parameters from the current safety analyses, technical specification, and the Dresden Administrative Technical (DATR) requirements. During the meeting typical mechanical, electrical, instrumentation & control, and nuclear key parameters were identified.

The following steps are part of the calculation basis verification activities:

- Identify the supporting calculations and establish that calculations support the key parameters
- · Initiate PIFs if calculations are missing, incomplete, or parameters are out of limits.
- Initiate PIFs if parameters are not consistent in the UFSAR, TSUP, or other design documents.

The discrepancy notification process was reviewed during the meeting and it was noted that when PIFs are generated, they will undergo the normal station screening process by senior station managers. If an operability assessment is required and it is determined that a system is inoperable or degraded, the NRC resident inspector will be notified immediately.

PIFs have been initiated for missing calculations:

- The time delay setpoint for initiation of the isolation condenser, and the makeup water flow rate.
- The turbine building closed cooling water (TBCCW) heat exchanger capability and hydraulic calculations.
- Net positive suction head (NPSH) for containment cooling service water (CCSW). PIFs have been initiated for potential discrepancies:
- The usable rating of the 125 VDC battery listed in the Upgraded Final Safety Analysis Report (UFSAR) does not apply.
- The minimum electrolyte temperature of 60°F in the Upgraded Technical Specifications (TSUP) is inconsistent with the 65°F found in the UFSAR and design calculations.
- The number of cells in the 250 VDC battery is different for the design basis documents (DBD) and the UFSAR.

• The NPSH for the LPCI pumps found in the DBD does not agree with the pump curves.

The minimum water level in the CCSW suction bay found in TSUP does not agree with the Dresden Administrative Technical Requirements. (DATR).

There is no requirement for on site storage of water for continued operation of the isolation condenser.

• DBDs for the isolation condenser are not consistent.

• The range of steam supply pressure to the high pressure coolant injection system (HPCI) found in TSUP does not agree with the operating surveillance procedure DOS 2300-03.

• Revised setpoints for ECCS initiation have not been implemented.

To summarize the project status:

• The project team and desk top instructions for them to function are in place.

• Key parameters and calculations have been identified.

· Four missing calculations and nine potential discrepancies have been identified.

• Review of calculations has begun.

The project is on track to finish as scheduled.

#### Special Audits of Architect Engineers and Vendors

The actions taken by Sargent & Lundy in response to Corrective Action Record (CAR) from the audit were discussed.

CAR AE-96-17-01 issued for failure to report to ComEd a design input error via memorandum.

# CORRECTIVE ACTIONS INCLUDED

- Sargent & Lundy CARs were issued.
- Additional calculations were reviewed and the Nuclear Design Input Transmittal (NDIT) Log was reviewed.
- PIF process was developed and instituted.
- Training was conducted on the use of PIFs for ComEd notification.

CAR AE-96-17-02 issued because deficiencies were identified in 11 of 24 Sargent & Lundy calculations which required PIFs to be written.

## CORRECTIVE ACTIONS INCLUDED:

- The calculations were revised or voided.
- A matrix was developed for trending and procedures were revised. The significance level ranges from 0 (editorial changes) to level 4 which indicates design margins have been exceeded.

• Sargent & Lundy committed to additional reviews of calculations by 17 March 1997.

CAR AE-96-17-03 issued because the Sargent & Lundy independent review process was not effective.

## CORRECTIVE ACTIONS INCLUDED:

Awareness training was performed on all issues.

Training was provided on reviewer exceptions.

Calculations were revised or voided where appropriate.

• An Engineering Assurance Program was developed.

CAR AE-96-17-04 issued because Sargent & Lundy audits were programmatic in nature.

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# CORRECTIVE ACTIONS INCLUDED:

- The use of technical specialists will be increased for internal audits.
- The content of audit check lists will be reviewed and revised as needed.
- The PIF process will be used to track/trend audit findings.

CAR AE-96-17-05 issued because a Sargent & Lundy calculation was not distributed for microfilming.

# CORRECTIVE ACTIONS INCLUDED:

- A review of the calculation index was performed.
- Awareness training was conducted.

CAR AE-96-17-06 issued because the range of applicability of piping software, PIPSYS, was not identified on appropriate documents.

# CORRECTIVE ACTIONS INCLUDED:

• The method of describing system limitations was reviewed.

Sargent & Lundy committed to the following additional actions or improvements:

- Develop a self assessment process.
- Develop/revise an Engineering Evaluation Process.
- Develop a procedure for third party reviews.
- Revise internal procedures to acknowledge the precedence of ComEd Nuclear Engineering Procedures (NEP).
- Provide special training on the formality of information transfer between ComEd and Sargent & Lundy.

As a result of the audit, the following additional improvements will be made by Nuclear Oversight and Site Quality Verification.

- Implement Industry Peer Assessment function by December 1997.
- Vertically integrate the audits and assessments of the onsite and offsite functions of the Engineering Services Group to avoid overlap and ensure that broad areas are addressed.
- · Conduct an assessment of the NUPIC process.
- Increase monitoring to provide real time assessments of engineering deliverables.
- Audit primary AEs, Nuclear Steam System Suppliers (NSSS), and fuel suppliers in 1997.

#### **Corporate Initiatives**

CAR AE-96-17-07 was issued to Corporate Engineering for failure to control the safety related design activities of the architect engineers (AE).

#### CORRECTIVE ACTIONS INCLUDED:

- Corporate Engineering considers this a generic issue because strict adherence to the established NDIT process has not been observed between ComEd and vendors for all design activities.
- A Tech Alert has been issued for all stations.
- A dual accountability system has been established with Sargent & Lundy to enforce the NDIT process.
- An Engineering Assurance Group will provide oversight to the process.
- Vendor audits will be used to measure the effectiveness of the process.

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The status of the short term actions identified in reference (2) are as follows:

- An Engineering Assurance Group has been established at each site and a Corporate sponsored Peer Group has been established.
- An NEP has been developed which specifies the steps to be followed when conflicts are found between the UFSAR, design documents and the physical plant. Training is complete at Dresden and is in progress at the other stations.
- Engineering Safety System Functional Inspections are scheduled to be complete at all sites by April 1997. At this time Dresden and LaSalle are complete, and Byron and Zion are in progress. Assessment of findings across the sites are expected by June 1997.
- The Corporate Engineering Assurance Group has been tasked to support the Vendor audits with subject matter experts.

Among the long term actions specified in reference (2) was the establishment of a Three Year Improvement Plan to Improve the Quality and Accessibility of Design Information. Actions to date include:

- The plan, which applies to all six sites, was established on December 30, 1996.
- The NRC Regional Administrator was notified of the plan by letter on January 30, 1997.
- Bechtel has been hired to manage the plan implementation with ComEd participation from all six sites.

The status of specific long term actions for Dresden Station are as follows:

- Twenty-three of thirty-three DBD topicals are complete.
- Validation is in process for all DBDs.
- The UFSAR will be reviewed against existing procedures, DBDs, and other design documents.
- Critical calculations will be validated or reconstituted.

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• The indexes of design information will be enhanced with cross references, dependencies, parameters, and other important design features.

During the presentation, it was agreed that the following information would be presented at the next meeting scheduled for 1:00 PM on February 28, 1997 at NRC Region III Headquarters:

A status of the Sargent & Lundy review of the ECCS, HVAC, and essential service water calculations at each of the six sites. It was estimated that a sample population of fifty would be reviewed with provision to expand based on the outcome.

A walk-through of one example of the system key parameter screening to /verify that calculations exist to support key parameters.

A thorough discussion of how errors found in the calculations are evaluated for significance including operability.

A more detailed milestone schedule for the planned actions by the Corporate Oversight Group and SQV.

A discussion of the EAG Peer Group charter which is currently under development.

A discussion of the NEP and flow chart which guides engineers through a design basis documentation conflict.

A discussion of the issue of EAG independence and our expectations for its use.

An explanation of significance of the level 3 (reduced margin) design calculation discrepancies identified in the Sargent & Lundy calculations and the scope of those deficiencies.

The basis for not including the Standby Liquid Control System and the Emergency Diesel Generators in the "12 System Review."

If you have any questions concerning this issue please contact Mr. Frank Spangenberg, Dresden Station Regulatory Assurance Manager, at (815) 942-2920, ext. 3800.

Sincerely,

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(L Stephen Perry) Site Vice President Dresden Station

cc: U. S. NRC Document Control Desk
J. F. Stang, Project Manager, NRR
J. Hopkins Acting Senior Resident Inspector, Dresden Station

Office of Nuclear Facility Safety - IDNS

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