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 AUTH. NAME AUTHOR AFFILIATION
 MINECK, D.L. Iowa Electric Light & Power Co.
 RECIP. NAME RECIPIENT AFFILIATION
 DAVIS, A.B. Region 3 (Post 820201)

SUBJECT: Responds to violations noted in Operational Safety Team Insp Rept 50-331/91-17. Corrective actions: field walkdown of emergency diesel generator sys will be completed by 920731 & functional group established to ensure drawing accuracy.

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Iowa Electric Light and Power Company

January 3, 1992
NG-92-0033

Mr. A. Bert Davis
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

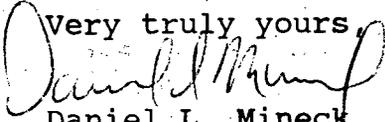
Subject: Duane Arnold Energy Center
Docket No: 50-331
Op. License DPR-49
Response to Notice of Violation
Transmitted with NRC Inspection
Report 91017

Dear Mr. Davis:

This letter and attachments are provided in response to the recent Operational Safety Team Inspection performed at the Duane Arnold Energy Center.

Attachment 1 responds to the item identified in the Notice of Violation. As requested, Attachment 2 addresses the status of the unresolved items and discusses our plans with regard to weaknesses identified in the report. We have also taken this opportunity to provide additional information regarding other items noted within the report.

Very truly yours


Daniel L. Mineck
Manager, Nuclear Division

DLM/JP/pwj

Attachments: 1) Response to Notice of Violation
2) Response to Unresolved Items, Weaknesses, and additional items

cc: U.S. NRC Document Control Desk (Original)

L. Liu
L. Root
R. McGaughy
C. Shiraki (NRR)
NRC Resident Inspector - DAEC
Commitment Control No. 910226

TEO/ 11

Iowa Electric Light and Power Company
Response to Notice of Violation
Transmitted with Inspection Report 91-17

NOTICE OF VIOLATION

10 CFR Part 50, Appendix B, Criterion VI, Document Control, requires, in part, that drawings for safety-related equipment are reviewed for adequacy. Plant piping and instrument diagram (P&ID) M-132 showed the four lube oil makeup table level alarm switch test connection valves open, pipe caps installed on each connection, and no connection between the three way lube oil drain valve for each emergency diesel generator (EDG) and a fitting on the lube oil makeup tank.

Contrary to the above, on October 17, 1991, P&ID M-132 for the EDG had not been properly reviewed for adequacy as evidenced by:

1. Three of four lube oil makeup table level alarm switch test connection valves closed with the pipe caps missing and;
2. A rubber hose connecting the lube oil drain valve for each EDG and a fitting on the lube oil makeup tank.

This is a Severity Level V violation (Supplement I).

RESPONSE TO NOTICE OF VIOLATION

1. The Reason for the Violation:

The makeup tank level alarm switch test connection valves and the (missing) pipe caps just below these valves were incorrectly represented on P&ID M-132. The lineup found in the field reflects the need for an oil flowpath during calibration testing of the alarm switches and for a readily accessible means of determining tank level. The valves and pipe caps in question were added to the P&ID during a drawing upgrade in 1988. An error was introduced on the drawing at that time. Valve position was correctly shown by the applicable Operating Instruction valve lineup.

The rubber hose referred to has been installed for many years to provide a readily accessible mechanism for the routine transfer of oil from the diesel generators to the lube oil makeup tank. Hose connections are normally shown on P&IDs but generally hoses themselves are not noted. However, in this case, the hose represents a substantial and necessary connection between two independent pieces of equipment. We agree that it is appropriate for it to be reflected on the P&ID.

2. The Corrective Steps That Have Been Taken and the Results Achieved:

The field configurations referenced in the Notice of Violation were reviewed and determined to be acceptable. The P&ID was updated to reflect the current status of the alarm switch test connection valves and the pipe caps, and the rubber hose was also noted.

3. The Corrective Steps That Will Be Taken To Avoid Further Violations:

Work has been ongoing since the fall of 1990 to further incorporate system and instrument valves into Operating Instruction valve lineups. This project includes a review of P&IDs for accuracy with respect to these procedures. The field walkdown of the Emergency Diesel Generator System for this effort was completed in December 1991. All of the project walkdowns will be complete by July 31, 1992. In addition, a separate walkdown is being done of safety system boundaries noted on the P&IDs where long-standing hose or tubing connections have been installed. This walkdown will be completed by January 31, 1992. During and subsequent to both of the aforementioned walkdowns, any noted discrepancies will be resolved and changes will be made to the P&IDs as appropriate.

A functional group has now been established with a specific task assignment of ensuring the accuracy of plant drawings. Currently, this group is reviewing the list of drawings now in the control room with the intent of improving the information provided for Operator use. A revised list of these drawings will be completed by January 31, 1992. Subsequently, a guideline for drawing content will also be developed and a systematic effort to assess the current content of the drawings in the control room will be undertaken. This work is scheduled for completion by the end of the 1993 refueling outage, following the final walkdowns within areas which are inaccessible during power operation.

4. The Date When Full Compliance Was Achieved:

Full compliance was achieved on October 24, 1991, with the revision of P&ID M-132.

Iowa Electric Light and Power Company
Response to Unresolved Items, Weaknesses and Additional
Comments Transmitted with Inspection Report 91-17

The report requested that Iowa Electric also address unresolved items and weaknesses noted within the text. Discussion of these concerns and additional report comments follow. The corrective actions and enhancements stemming from the review of these issues are being prioritized and will be implemented accordingly.

UNRESOLVED ITEMS:

Unresolved Item 91017-01, Review of General Electric
Service Information Letter 475

The report noted as unacceptable our 1989 evaluation of General Electric Service Information Letter (SIL) 475. This SIL dealt with setpoints for the High Pressure Coolant Injection (HPCI) and Reactor Core Isolation Cooling (RCIC) high steam flow isolation. Iowa Electric's initial review of that document reached the conclusion that the plant setpoints in effect at that time were adequate. However, this evaluation was too narrowly focused and sufficient justification for the conclusion was not provided. The reviewer did recognize that a followup review in greater detail was warranted and the evaluation initiated this action. This additional work was being tracked to ensure completion, but it had not been completed at the time of the inspection.

The followup review of SIL 475 is being finalized. It has been determined that the present setpoints for the high steam flow isolation switches are adequate to ensure the continued operability of the HPCI and RCIC systems per the plant Technical Specifications.

During the followup review of the SIL, it was found that the setpoints for both the HPCI and RCIC systems could be modified to optimize the margin for system reliability while still maintaining a conservative margin for the isolation function. This will be done. A Technical Specification change is required to implement the new setpoints, and an amendment request is being developed. In addition, at least one switch in the HPCI system will require replacement by an instrument which has a range better suited to its proposed new setpoint. Alternative instrumentation is currently being examined for suitability.

Iowa Electric does not consider the delay in final resolution of SIL 475 to have been acceptable performance for review of industry generic information. To ensure that no items of similar significance await review, all open commitments pertaining to such information, either for initial review or followup action, have been examined. No item whose outcome could immediately effect the operability of safety systems or components was identified.

Examination of our program for tracking completion of industry generic information activities revealed that initial document reviews are closely monitored to ensure timely completion, but that followup actions stemming from these reviews are not. This has been corrected. Quarterly reports to management on the status of generic industry information reviews will now note all outstanding followup actions.

Over the past year, Iowa Electric has made a number of enhancements to our program for reviewing industry generic information. During that period, we have reduced the number of items awaiting initial review by 60%, to the present total of 38. Approximately 30 followup actions from earlier reviews are being tracked and await completion. Since 1986, over 1100 industry generic information items have received formal reviews, and nearly 370 additional work items stemming from these reviews have been tracked to completion.

Unresolved Item 91017-2, Calculations for Revised Emergency Service Water Flow Rates

During the inspection, the inspectors noted that flow rates provided by Emergency Service Water (ESW) for the control building chillers, residual heat removal pump seal coolers, and core spray pump motor coolers were found during a Special Test to be less than the UFSAR values. Operability determinations were not made and the Special Test had not been signed off pending the results of an upcoming study which has since been completed. That study provided revised flow rate requirements and indicated the current flow rates determined by the Special Test were acceptable. The NRC is currently reviewing the technical adequacy of the new design basis calculations for ESW in connection with Iowa Electric's request for a Technical Specification change. The inspection report states this issue is to remain as an unresolved item pending completion of the NRC review of the new design basis calculations.

The Special Test has now been reviewed and signed off. The Administrative Control Procedure for Special Tests has been modified to formalize the test conductor's responsibility for reviewing test data and acceptance criteria at the completion of the test in order to determine the acceptability of the results. Operability determinations would then be made as necessary.

Unresolved Item 91017-05, Average Power Range Monitor Bypass
Switches and Operational Amplifiers

The report noted that the current practice at the Duane Arnold Energy Center (DAEC) is to bypass two of six Average Power Range Monitors (APRMs) using bypass switches provided in the control room. This is done to avoid unwarranted scrams caused by Local Power Range Monitor (LPRM) inputs that are shared by APRMs located in opposite sides of the Reactor Protection System (RPS) trip logic. The report stated that while having one channel in bypass (per RPS logic side) does still allow for a single failure, the installed switches for bypassing APRM channels were not intended for continuous use to allow operational flexibility over the long-term and to deal with the design weakness of shared LPRMs. It was also noted that, as reported in Licensee Event Report (LER) 85-034, replacement operational amplifiers (op amps) within the LPRM circuitry were saturating upon re-energization of the RPS power supplies, and this could cause RPS trips due to the shared LPRM design. The report noted that a safety evaluation had not been performed before the operational amplifiers with different performance characteristics were installed. The inspection report stated that the NRC's evaluation of these two issues is to be tracked as an unresolved item.

As discussed with the inspectors, Iowa Electric believes it is in the best interest of plant safety and reliability to maintain certain APRMs in bypass whenever possible so that the design characteristic of shared LPRMs will not cause unnecessary and unwarranted plant transients. This can be done while still preserving the single failure design criteria of the RPS logic. This approach was evaluated pursuant to 10 CFR 50.59 during the inspection and a UFSAR update has subsequently been completed and will be submitted in the next annual update to document the practice of bypassing APRMs.

Regarding the installation of the operational amplifiers, as noted in LER 85-034, the re-energization saturation characteristic of these amplifiers was not discovered until after their installation. The operational amplifiers were provided as like-for-like replacements by the vendor under the same part number. Saturation characteristics upon re-energization were not part of the vendor specification for this component. The new operational amplifiers would not have prevented fulfillment of the safety function. Vendor representatives were involved in the initial investigation for the LER in 1985. Steps were subsequently taken by DAEC to compensate for the component's response through procedures. The vendor has since recommended a long-term solution to this problem via a Service Information Letter revision, and implementation at DAEC is scheduled for the 1993 refueling outage.

WEAKNESSES:

The report noted that no formal training program was in place for System Engineers, and management expectations for what a System Engineer must do to be fully qualified on a system were not clear. Iowa Electric recognizes that this need must be addressed. A good deal of effort has gone into the integration of new employees within the Design Engineering organization, and this will continue with the development of a general qualification standard for the Design Engineering professional staff in the opening months of 1992. This standard will require knowledge of items such as plant systems, equipment data bases, plant organization, and administrative control procedures. Qualification programs for System Engineers will be developed by mid-1992 and will include system descriptions, design basis information, and Technical Specifications. Training and qualification of Design Engineering personnel will follow the development of these programs.

The report considered Iowa Electric's trending efforts as adequate but also referred to aspects of the overall trending program which could be improved. It was noted that management's expectations of what data should be trended and how it should be used had not been provided for the System Engineering trending activities and information pathways for getting needed data had not been clearly identified and established.

The trending conducted by System Engineering is a vital aspect of the Performance Monitoring Program (PMP) which has been developed and implemented over the past year at DAEC. During that period we

have learned more about the practical considerations which go into such an effort. Revision of PMP procedures is a logical next step in this process. This is being done, with completion anticipated by mid-1992. Procedural descriptions of program goals, responsibilities and information retrieval methods are included in the revisions to reflect more clearly the purpose and application of the program.

The report noted procedure ACCUMU-G250-001 did not specify that a deficiency report should be written if the Standby Liquid Control accumulators are found to have a lower than acceptable nitrogen pressure. The general criteria for initiation of deficiency reports at DAEC are noted within the Deviation Report (DR) procedure rather than within each maintenance procedure. Review of the DR procedure determined that clarification of the criteria for initiating a report in connection with preventive maintenance activities was needed. This has been completed.

The report noted that, during preparation of subsequent budgets, modifications that had been cut from the 1991 budget did not receive the in-depth prioritization review from the Priority Review Board (PRB) that new modifications receive. In the future, this will be done. While developing the approved projects list for upcoming years, the PRB will annually review all proposed projects. Old and new proposals will receive the same level of review. The decision will be made to fund a project, cancel it, or defer it. It is anticipated that review of all proposed projects for continued acceptability will be completed during the spring of 1992.

A minor weakness noted within the inspection report was that the Design Engineering procedures did not fully reflect all the ways of utilizing the Priority Review Board (PRB). The example provided was for the procedure documenting the Engineering Work Request (EWR) process. At this time, we do not plan to modify Design Engineering procedures to reflect use of the PRB. The PRB is a relatively recent addition to Iowa Electric's prioritization process and its methods continue to be refined. The supervisor who oversees the EWR process, and several additional Design Engineering supervisors, sit on this Board and can provide feedback to and from Design Engineering.

The report noted that some minor modifications are left open for long periods while more costly modifications are completed. The

report attributes this to the prioritization process and a design change process that treats a minor modification to a safety system as the equivalent of a major design change. Iowa Electric recognizes that attempts to meet all requirements and expectations can create cumbersome processes for design control and plant modifications and may inhibit positive change. Solutions to these difficulties are actively being sought. One such effort has been the development of refinements to our Engineered Maintenance Action process to streamline this activity. These are currently being implemented.

The report noted manual valves, specifically in the diesel generator systems, which were not tagged in accordance with the plant labeling program. The valves either had no tags or an inaccurate orange tag which remained from an earlier plant initiative. As previously noted in the response to the Notice of Violation, the walkdown of plant systems to ensure the accuracy of the P&IDs with respect to plant procedures is continuing. Implementation of the plant labeling program has been proceeding in addition to this effort. Previously unlabeled components which are identified by the walkdown effort are being labeled. It is anticipated this activity will be completed in the fall of 1992. Remaining orange tags are routinely removed during the labeling process.

The Inspection Report noted that the lack of involvement by Design Engineering in the initial review and approval of Technical Specification Interpretations (TSIs) was considered a weakness. As noted below, this is being addressed.

Since the SALP 9 Report, we have taken steps to improve the process for issuing new TSIs. In several meetings with the NRC Staff, we described these actions and reported on our progress. Therefore, we are concerned that comments in the OSTI report apparently reflect a perception that progress being made in this area is not sufficient. We wish to address several points:

The report correctly states that procedure NGD 102.16 formalized the mechanics of our pre-existing process by which TSIs are issued. However, a more rigorous standard was adopted for justifying new TSIs as part of the procedure's development and we have also adopted a policy of minimizing the lifetime of TSIs. Of the four TSIs reviewed during the inspection, only one (for which no concerns were identified) was written subsequent to our development of the more rigorous standard.

In response to the SALP report, and in parallel with developing the procedure, we reviewed the existing TSIs to ensure that each had an adequate justification. However, we made a decision to not re-write each one to reflect the new standard being developed, but instead embarked on a program to retire them systematically through changes to Technical Specifications (TS), changes to procedures or operator training. To date, of the 26 TSIs which were in effect at the time of the inspection, 8 have been retired, 9 will be retired as a result of TS changes already docketed; and 5 will be retired as a result of TS changes currently scheduled. The remaining 4 will be retired as opportunities arise.

We agree that further improvements in our TSI process must be made. Upon review of the suggestions in the OSTI and the discussion of TSIs at the recent NRC Project Directorate III-3 Counterparts Meeting, we revised our TSI procedure to require Design Engineering's review and concurrence in new TSIs, to provide instructions for deletion of TSIs, and to number each TSI sequentially to improve document control. Design Engineering has also reviewed the 4 remaining TSIs noted above.

ADDITIONAL COMMENTS:

The report noted that information communicated from another utility regarding HPCI oscillations during actual injection had not been reviewed. This is being done. DAEC has no history of HPCI oscillations during actual injections.

The report noted that System Engineers do not receive completed copies of corrective maintenance action requests to ensure they are aware of potential issues. This is being rectified.

The report noted that a modification to install a permanent gage on the Standby Liquid Control nitrogen accumulator so that low nitrogen pressure could be detected by an operator on rounds has been proposed, but is currently not on the active project list. This proposal will be re-reviewed by the Priority Review Board.

The report noted that while site operations and maintenance procedures are reviewed to ensure they reflect vendor manual requirements, comparison of the preventive maintenance (PM) activities recommended by the vendor manuals with site PM practice

is not clearly stipulated by Iowa Electric procedures. This is being corrected. The Discipline/Component Engineering (DSCO) group responsible for maintaining the vendor manuals will identify vendor-recommended preventive maintenance during their periodic manual reviews. These vendor recommendations will be examined by Systems Engineering personnel in cooperation with Maintenance Engineering. This documented review will ensure the recommendations are being implemented or that there is sufficient justification for alternative actions, based on items such as equipment reliability and importance to safety. Procedural controls for this activity are being developed. (One exception is vendor recommendations for equipment within the Environmental Qualification (EQ) program, which are already being reviewed by Discipline/Component Engineering as part of this program). Preventive maintenance activities at DAEC are delineated and controlled by a computer database (CHAMPS) whose contents currently reflect both vendor recommendations and field experience. This database will be maintained and upgraded based on the aforementioned reviews.

It was noted in the report that formal proceduralization was needed for the Instrument Trending Program to ensure the effective actions now being taken will continue. This is being done.

The report noted that some difficulties occurred with the coordination of Limiting Condition for Operation (LCO) maintenance on the diesel engine driven fire pump. This problem has been reviewed, and as a corrective action the LCO planning process is being revised to include a review of system LCO activities over the previous six months. This will help ensure the number of LCOs is minimized and the maximum benefit is obtained from each. A recently performed surveillance of LCOs found the planned LCO process, in general, has been effective in reducing the number of unplanned outages. Repetitive LCOs on the same system did not appear to have had a serious impact on system availability during the 20 month surveillance interval.

The report stated Iowa Electric does not generally authorize overtime to support maintenance performed under a LCO, and that current NRC guidance is that all reasonable efforts should be made to minimize the duration of such LCOs. Iowa Electric concurs with the NRC guidance in this area. At DAEC, all maintenance-related LCOs are planned for a duration of less than half the Technical Specification limit. We will continue to work toward minimizing the length of LCOs by all reasonable means available.

The report noted that during the daily plan of day meetings, little accountability was required by management when previously made commitments were not met and when completion dates slipped. At the time of the inspection, the meeting was in the developmental stage. The Plant Superintendent has since assumed chairmanship of the meeting and is requiring increased accountability for commitments.

The team had questions regarding the technical basis for methods used in a HPCI pipe support base plate anchor bolt torque calculation. As noted in the report, the team requested that the basis (test data) supporting the methodology used for the calculation be provided. This was considered an open item. A copy of the letter and test data supplied by the vendor to Iowa Electric in response to this request has been forwarded to the NRC.