



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 787
Chicago, Illinois 60680 - 0767

January 25, 1990

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

Subject: Zion Station Units 1 and 2
Response to SALP 8
NRC Docket Nos. 50-295 and 50-304

Dear Mr. Davis:

This letter provides Commonwealth Edison's response to the Systematic Assessment of Licensee Performance (SALP 8) report covering the period June 1, 1988 through September 30, 1989.

Commonwealth Edison appreciates the SALP Board's candid assessment of Zion Station's performance. The report provides an accurate assessment of Zion's performance during this period.

The additional details presented at the public SALP meeting held January 4, 1990, at Zion's Emergency Response Facility helped Commonwealth Edison more fully understand NRC's concerns.

Zion Station recognizes that certain areas of Zion's performance, specifically Engineering/Technical Support and Security, did not achieve the desired results when compared to other SALP areas. Commonwealth Edison is committed to substantial improvements in these areas as well as general upgrades in Zion's overall performance.

Commonwealth Edison's corrective actions taken or planned to address the concerns in the areas of Engineering/Technical Support and Security are described in Enclosures 1 and 2. Through the implementation of these corrective actions, Zion Station is committed to reversing the downward trend in Security and establishing an upward trend in Engineering Technical support.

Enclosure 3 provides Commonwealth Edison's review of the remaining SALP functional areas. The purpose of this review was to assure ourselves that the Performance Improvement Plan addressed each weakness identified and to share the results with the NRC.

Commonwealth Edison is pleased that the SALP report acknowledged the Performance Improvement Plan as the vehicle Zion Station chose to improve performance throughout the plant. Zion Station embarked on an improvement plan because it was not satisfied with the rate of improvement and because performance had not kept pace with rising expectations. Accordingly, the Performance Improvement Plan was not limited to improvement items identified by the NRC but, rather, it includes a broader spectrum of items which address Commonwealth Edison's expectations for excellence. Successful implementation of the plan will demonstrate Zion Station's ability to improve performance and realize Zion's commitment to excellence.

9002260293 900209
PDR ADDCK 05000295
G PNU

JAN 29 1990

January 25, 1990

As requested by the SALP cover letter, Enclosure 4 clarifies the specific sections of the report. These clarifications are provided to ensure that both Commonwealth Edison and the NRC have a common understanding of the concerns identified. We recognize, however, that these clarifications do not affect the performance rating in those areas.

Commonwealth Edison believes the corrective actions taken and corrective actions to be taken will effectively complete the resolution of the concerns identified in this SALP report.

Commonwealth Edison is committed to excellence in plant operations. Recognizing this commitment, we have challenged ourselves to affect a positive change during the SALP 9 period. Zion Station has the ability and the resources necessary to accomplish that objective and believes that the NRC will see that improvement as it monitors Zion's performance.



T. J. Kovach
Nuclear Licensing Manager

cc: C. Patel-NRR
Resident Inspector-Zion
Office of IDNS

ENCLOSURE 1

ENGINEERING/TECHNICAL SUPPORT

CONCERN

There were many examples of deficient operational conditions where engineering involvement was lacking. These included the failure to involve system engineers in generic problem analysis, post maintenance testing, and root-cause analysis, and there was a general lack of communication with coordinators of generic functions such as the vibration coordinator. In addition, engineering personnel were not sufficiently involved in the interpretation of the Technical Specifications made by operations management personnel.

CORRECTIVE ACTION

To strengthen technical support, the station Technical Staff has recently undergone several organizational changes. The Technical Staff has been reorganized from six groups to seven, and ten additional personnel will be added. The Technical Staff is also participating in a task force to define and implement a "system notebook" function designed to serve as an information source for a system engineer. Each system should have a set of files modeled after sections of the notebook to allow an engineer to quickly and easily find information needed. Standardization of the "notebook" will also ensure that system turnover will be efficient and will allow a backup engineer to locate information when necessary. A draft "notebook" will be completed by March 1, 1990. This will be used as a guide by the System Engineers to develop their notebooks. This will be an ongoing project extending throughout 1990.

To assure technical support of operational conditions, Technical Staff and Regulatory Assurance personnel attend the daily operating meeting. This change began January 4, 1990.

Since December 1989, licensed personnel in the Regulatory Assurance Department have been reviewing degraded safety related equipment logs daily to verify all operability considerations have been properly evaluated. Additionally, Technical Staff personnel have been performing a technical review of Work Requests for operability concerns. To date, these technical reviews conclude that no inappropriate operability determinations were made.

In December 1989, a matrix from the UFSAR was developed which defines systems/functions that support Technical Specification equipment. These support systems/functions are now considered when determining whether a component is operable.

Corporate Engineering will review the UFSAR Matrix of operability requirements for support equipment to ensure consistency with existing design basis requirements.

Additionally, Corporate Engineering will ensure that the UFSAR errors/inconsistencies list related to support system descriptions found during the preparation of the Matrix are incorporated into the appropriate UFSAR Support System Sections.

Zion Station and Corporate Engineering will then investigate the feasibility of eliminating selected support system requirements where relief is appropriate.

Corporate Engineering will provide to Zion Station the Individual Plant Evaluation system notebooks and the Westinghouse design basis documents that are presently under development to be used as tools for operability determinations.

Corporate Engineering will continue progress toward FSAR rebaseline. As a minimum, Corporate Engineering will develop an improved UFSAR update process for implementation at Zion Station.

In January 1990, Commonwealth Edison formed a task group comprised of personnel from Senior Corporate Engineering, Quality Programs, Nuclear Operations, Performance Assessment, and Senior Station management. The task group is charged with reviewing the concerns identified in the SALP report and self-identified, to determine the improvements needed to strengthen technical support. The group is expected to complete its review during the week of January 29, 1990, and develop recommendations for improvement by February 28, 1990.

CONCERN

Weaknesses were observed in engineering support for maintenance and surveillance activities. Specifically, weaknesses were noted in evaluation of problem root-cause, response to industry information and vendor recommendations, and formulation of post-maintenance testing requirements.

CORRECTIVE ACTION

The development of the system engineer notebooks will also have reference sections for industry experience and vendor information, which will improve responsiveness in these areas. Additional root-cause training in the HFES and MORT techniques is planned for selected system engineers during 1990. Utilization of the Problem Analysis Data Sheets program, from the Conduct of Maintenance Directive, will also be implemented to provide improved support to maintenance.

A pilot post-maintenance testing program has been developed and implemented at the Quad Cities Station. Zion will monitor the pilot program and incorporate the improvements from this program into their post-maintenance testing activities.

Further support in these areas will be provided by the development of a Nuclear Engineering Department onsite engineering group. Initial staffing of one Supervisor and two engineers will be achieved by April 1, 1990. Staffing will increase to one Supervisor and five engineers by December 1, 1990. The Nuclear Engineering Department will also implement reviews of modification test results to ensure that the modifications perform as expected.

CONCERN

In a number of instances oversight and management of contractor services were inadequate. For example, failure to establish a correlation between Main Steam Safety Valve testing methods performed by a contractor resulted in the plant operating outside the design basis twice during the assessment period.

CORRECTIVE ACTIONS

Zion Station is preparing permanent procedures that will be used for future Main Steam Safety Valve testing.

The previously discussed task group will review the contractor control area to see if additional controls are needed.

CONCERN

During the implementation of the requalification program, management oversight was lacking in the exam preparation process.

The staffing levels were generally adequate; however, there was insufficient dedication of staff to the implementation of the requalification program and an excessive reliance on contractor personnel.

CORRECTIVE ACTION

In early October, 1989 Zion convened a multi-disciplined independent review of training activities. The charter of this review group was to identify, through use of Human Performance Evaluation System (HPES) methodology, any shortcomings in the training requalification process. Action plans for each concern identified by this group were developed and are being implemented.

Also identified by the review group was the fact that the existing operator requalification program contained unstructured self-study and did not require attendance at lectures. Changes to the requalification program for the 1990 training cycle will eliminate this concern. Licensed operators are required to participate in a minimum of 180 hours of retraining material which includes lectures and directed self study. In addition to the 180 hours of classroom study each operator will receive 60 hours of simulator instruction.

A corporate and station working group developed a Commonwealth Edison guideline for the preparation of Licensed Operator Requalification Exams that will ensure well prepared and consistent examinations.

ENCLOSURE 1 - Continued

There was insufficient dedication of CECO staff to the implementation of the requalification program and an excessive reliance on contractor support due to the concurrent tasks of exam bank preparation for the new requalification examination format and the operating reaccreditation effort. Since these two efforts are essentially over, the use of contractors has dropped significantly. In addition, the recent promotion of 3 Reactor Operators into the Training Department has allowed a greater participation by our staff in this program. Zion Station is also in the process of developing our own ANSI qualified simulator, to be fully operational by May 1991, which will be run by CECO personnel, rather than contractor personnel, as our current simulator is run. These actions will lead to more control of our requalification program by our own staff.

CONCERN

Although the licensee had made procedural improvements to the safety evaluation and temporary alteration programs, these were only partially effective. In the performance of safety evaluations, the licensee applied a very narrow focus that allowed alterations to be performed to TS equipment or systems without evaluations.

CORRECTIVE ACTION

Zion's screening procedure used in the safety evaluation process has been upgraded to increase the effectiveness of the evaluations performed. To augment this process, training was provided to members of the Technical Staff during 1989. Another upgrade to existing station procedures on the safety evaluation process is in progress to address how to adequately document the evaluation methodology used. This will include a reference to the documents used in determining whether a complete evaluation is required or the screen is sufficient. This additional upgrade will be completed by January 31, 1990.

An Assistant Technical Staff Supervisor is an active participant in CECO's corporate safety evaluation task force. This task force is committed to utilizing guidance provided by NSAC 125 to develop safety evaluation criteria for use throughout Commonwealth Edison. This task force is expected to complete it's review and provide a draft response to corporate by February 9, 1990. Corporate review and acceptance of the draft response will result in issuance of a Nuclear Operations Directive (NOD). Each station will be required to implement the recommendations contained in the NOD within 60 days of receipt.

The effectiveness of the temporary alteration program will be further increased by timely performance of a post installation review by the Nuclear Engineering Department and by an overall reduction in the total number of temporary alterations utilized. The above stated improvements in the safety evaluation process will ensure that all temporary alterations are properly evaluated.

ENCLOSURE 2

SECURITY

CONCERN

The number of violations issued during the SALP period are representative of a decline in performance and programmatic weaknesses relating to management oversight.

CORRECTIVE ACTION

To address this concern, Zion security staff, both the security contractor and CECO, have been increased. A member of the corporate security staff has been assigned to assist the Zion Security Administrator since October 1989. This individual has provided a positive contribution to security performance as evidenced by involvement in the timely and effective review of a tampering case as well as his involvement day to day activities. Additionally, a second permanent Security Assistant was added to the site staff on January 8, 1990.

A special security assessment was performed early in the SALP 9 period to identify all security weaknesses. The assessment was performed under the guidance of the corporate assessment group and included site security administrators from other CECO sites. The assessment identified 19 improvement items, 17 of which have been completed to date. The remaining two improvement items will be completed by April 1, 1990. To assure management attention to security items is properly identified, Zion is implementing a monthly security report to address trending of critical security parameters such as maintenance, reportable events, security event reports, etc.. This monthly report is scheduled to begin on April 1, 1990, and will be provided to senior station management and to the Senior Resident Inspector.

To assure adequate management oversight, Zion station has temporarily limited the scope of the Services Director responsibilities. The Security and Training departments are the only direct reports to the Services Director until performance in those areas achieves management expectations.

CONCERN

During most of this assessment period, the overall effectiveness of site and corporate security and plant management in assuring the quality of the security program was weak. This was evidenced by the repeated violation for degraded vital area barriers and the weaknesses discussed previously. The corrective action taken was not effective at the time in correcting the root-cause of the problem.

ENCLOSURE 2 - Continued

CORRECTIVE ACTION

The concerns can be broken into two areas. The first was a lack of coordination between Station Security and the Construction Department during the construction of the large scale facilities improvements at Zion Station. The second was the lack of guidance from Corporate Security on the establishment and periodic review of compensatory measures. To address these two areas, Zion has implemented an action plan to oversee on-going and new construction projects. Emphasis will be placed on construction activities which affect control of security barriers. Zion has also developed a policy for controlling the installation of temporary vital area barriers which will ensure their adequacy. Temporary barriers must be equal to or of greater penetration resistance than the barrier being degraded. Zion requires that an engineering evaluation be performed to determine that the temporary barrier to be installed meets the above requirements. This review is required prior to the installation of the temporary barrier.

Additionally, a Corporate policy for clearly defining compensatory measures has been established. Corrective actions to reduce the time a compensatory measure is needed are aggressively implemented. Furthermore, guards are rotated frequently to minimize time spent by an individual manning a compensatory measure post.

CONCERN

In addition to the violations, inspectors identified other deficiencies that demonstrated weak management effectiveness. These weaknesses involved: poor identification, prioritization, timeliness, and trending of the security work orders; a decline in guard force performance demonstrated by two instances in which guards were inattentive to duty; a need for additional performance-oriented QA audits and increased QA surveillances; and a general lack of management effectiveness that was demonstrated by the various violations and weaknesses.

CORRECTIVE ACTION

The Zion Security force has been increased by 30% to reduce the need to work overtime. This will reduce the potential for inattentiveness due to excessive overtime.

A Security Supervisor has been added to the Security Staff. This supervisors primary responsibility is management of security work orders.

As mentioned earlier Zion is implementing a monthly security report which will identify and trend the number of security work orders. This report will be provided to senior station management and the Senior Resident Inspector.

ENCLOSURE 2 - Continued

Site Quality Assurance has scheduled a number of performance based inspections for 1990 along with an increased number of surveillances. The 1990 audit/surveillance schedule includes a performance based audit to start on May 11, 1990. Routine surveillance scheduling would normally include quarterly reviews of the security area; however, to provide assurance of continuing performance improvement, this surveillance frequency has been increased to monthly. In addition, a QA engineer completed guard force training late in the SALP period to support performance based audit/surveillance activities.

CONCERN

The licensee's responsiveness to NRC initiatives was weak, as evidenced by the less than adequate corrective actions that resulted in a repeat violation. The licensee was slow to respond to NRC concerns when the issue initially was identified. The licensee took a less than conservative approach to reporting security events, which resulted in a violation. The licensee tended to address findings narrowly, rather than review a broader scope, when dealing with corrective actions.

CORRECTIVE ACTION

Since September 1989, the Zion Regulatory Assurance department interfaces with the Security department to provide a technical review of safeguards reporting, and security event reports. The Security department also consults with the Regulatory Assurance department to determine reportability requirements and to define the scope of needed corrective actions.

As stated earlier, the Security assessment conducted in November and December, 1989, identified 19 improvement items. To date 17 have been completed. As part of the Zion Performance Improvement Project, 37 action plans have been developed comprised of 184 steps. To date 159 steps have been completed.

CONCERN

Security staffing levels were adequate to ensure a level of performance that met regulatory requirement, but resources were somewhat strained when additional responsibilities were placed on the staff.

CORRECTIVE ACTION

Effective in January 1990, station fire watch duties, including supervisory responsibilities, are being performed independent of the station security force.

During 1989, an additional 21 guards were added to the security force. Additional increases are expected in the first quarter of 1990. To assure an effective guard force, overtime usage is aggressively monitored. Guard force overtime is reviewed by management to verify the guidance of Generic Letter 82-12 is not exceeded.

ENCLOSURE 3

PLANT OPERATIONS

CONCERN

The station's trip performance declined somewhat during this assessment period.

CORRECTIVE ACTION

Zion recognizes that any inadvertent reactor trip from power is undesirable. Zion Station has an active Trip Reduction Committee that reviews reactor trips for cause and Licensee Event Reports to determine the adequacy of corrective actions. With respect to the number of trips mentioned in the SALP report, it should be noted that the majority of trips occurred early in the SALP period and that Unit 1 has not had an inadvertent trip since January 27, 1989 and Unit 2 has not had an inadvertent trip since October 12, 1988.

CONCERN

Management involvement to assure quality in the operations area was mixed. Operating decisions sometimes involved narrow interpretations of Technical Specification requirements concerning component operability.

The operations staff does not routinely consult with the technical staff regarding operability concerns.

Operator knowledge of plant status was generally good, but failures to recognize or correctly implement regulatory requirements still result in events and violations.

The licensee's approach to the resolution of technical issues from a safety standpoint was inadequate in some cases.

CORRECTIVE ACTION

After a review of the issues raised by NRC, Zion Station determined a need to develop mechanisms which would allow for a more comprehensive and timely review of Technical Specifications as well as development of tools to aid on-shift personnel in making operability determinations. In December 1989, Zion revised its procedure for inoperable equipment to require an independent technical review.

Since December 1989, licensed personnel in the Regulatory Assurance department have been reviewing the degraded safety related equipment logs daily to verify that all interpretations for Technical Specification equipment operability have been properly evaluated. Additionally, Technical Staff personnel have been performing a technical review of work requests for operability concerns. To date, these technical reviews have not identified any inappropriate operability determinations.

ENCLOSURE 3 - Continued

Zion also recognizes that the Technical Specifications are not the only document to be used when making operability determinations. In December 1989, a matrix from the FSAR was developed which defines systems/functions that support Technical Specification equipment. These support systems/functions are now considered when determining whether a component is operable. While the FSAR matrix was under development copies of all work requests were forwarded to Technical Staff personnel for technical review of operability concerns.

To provide additional support to the Operations staff, Regulatory Assurance personnel attend daily operations department meetings. These daily meetings, that began January 4, 1990, were designed to focus the efforts of all working groups to support the Operation Department's daily priorities and to provide a vehicle to discuss abnormalities, test results, etc. that occurred during the previous shifts.

CONCERN

Licensee efforts to resolve operability concerns were usually thorough, although inspector follow-up was often necessary to initiate action.

CORRECTIVE ACTION

Zion has initiated weekly meetings between the Senior Resident Inspector and the Station Manager to discuss current station operating status and SRI concerns.

Since 1989, The Regulatory Assurance department also provides frequent contact with the SRI to coordinate information needed to resolve NRC concerns in a timely manner. Additionally, station personnel complete a station contact sheet after interface with the SRI staff to provide a mechanism for notification to station management of on-going NRC concerns. Issues raised during routine and special inspections are tracked on a computer data base to ensure completion of corrective actions and commitments to NRC.

CONCERN

Operating personnel demonstrated inadequate job planning on two occasions. During the first occasion, the licensee entered the containment because of increasing Pressurizer Spray Valve (PSV) leakage. However, because personnel were not properly prepared or adequately briefed, both PSV's were inadvertently isolated. In the second occasion, involving an un-planned gas release, the operations crew failed to recognize the potential for a repeat gas release due to plant conditions and demineralizer's status.

ENCLOSURE 3 - Continued

CORRECTIVE ACTION

An EPES evaluation was performed on the two events to identify the root cause and causal factors, and to identify the proper corrective actions to prevent recurrence. Two important corrective actions have been implemented as a result of the evaluation.

- 1) Pre-job briefings by all personnel involved with significant evolutions is now required. The briefings goal is to establish good communications between working groups and a common action plan to accomplish the desired results.
- 2) Alternate communications methods have been established when working in high noise areas to prevent communications errors.

A description of the events and a discussion of the corrective actions that were implemented were also published in the Station's Operating Experience Newsletter to alert all station personnel of the potential for communication errors in high noise areas.

ENCLOSURE 3 - Continued

RADIOLOGICAL CONTROLS

CONCERN

Management support of RP and Chemistry programs was mixed. Management control weaknesses were noted regarding: the timeliness and thoroughness of reviews and corrective actions for problems identified by the Radiation Occurrence Reporting (ROR) system; and high radiation area entry and rad door key control.

CORRECTIVE ACTION

Quarterly Radiation Protection Manager (RPM) meetings are held with senior station management to give proper emphasis to radiation protection issues. To further aid in management oversight Zion plans to hire an additional Health Physicist during 1990.

Zion appointed an ROR coordinator in December 1989 to ensure timely completion of these documents. The ROR coordinator is responsible for ensuring that timetables established for processing ROR's are met and that corrective actions are completed in a timely manner. Quarterly reports of ROR status, including corrective action required, are forwarded to station management for review.

To ensure adequate control of high radiation areas, the Radiation Protection department assumed control of the station "R-keys" (effective June, 1989). This has resulted in a greater than 50 % reduction in high radiation door violations in the first six months of the new program.

CONCERN

The quality of the chemistry technician performance testing program, which was well-implemented early in the assessment period, declined somewhat in the latter part of the period.

CORRECTIVE ACTION

The chemistry technician proficiency testing program, while not being implemented at the time of inspection, was satisfactorily completed by the end of 1989. Zion is considering an enhancement to this program for 1990. Final resolution of proposed changes to be made to this program will be identified by March 1, 1990.

ENCLOSURE 3 - Continued

CONCERN

The licensee's responsiveness to NRC initiatives was generally good, with some exceptions. Although concerns regarding the process and effluent radiation monitoring systems have persisted for several years, the licensee has not adequately resolved the issues.

CORRECTIVE ACTION

Zion has implemented a Radiation Monitor task force comprised of senior station management and cognizant department heads which meets weekly to discuss problems with and develop solutions for inoperable rad monitors. The cognizant Technical Staff Engineer also provides a weekly report to the task force members. Zion has also designed a Radiation Monitor Display System (RMDS) which has been installed on Unit 1. The Unit 2 RMDS modifications will be installed during the spring 1990 refueling outage.

Recommendations from the task force have included replacement of the OA Lake Discharge Tank Monitor, upgrade of the OB Lake Discharge Tank Monitor (minimum upgrade of a seal-in function) and replacement of the Vent Stack Monitoring systems. A budget request has been submitted for the Lake Discharge Tank Monitors; and an engineering evaluation by Technical Staff and Engineering and Construction has commenced to determine the cost of replacing the Vent Stack Monitors.

The Fuel Handling Accident In Containment (FHAIC) radiation monitor modules are required during refueling operations. To prevent failures during normal operations, a procedure was created that removed these monitors from service when they are not required.

Support was given to Emergency Planning to determine the design changes required to implement the software for the new A-Model program to be installed at the station.

CONCERN

The licensee's approach to resolution of technical issues from a safety standpoint was mixed. Examples of poor performance included: personnel errors and lack of adequate procedures that led to the radioactive material shipping violations; poor work planning and document controls that led to unnecessary work in the fuel transfer canal resulting in added personnel exposure; and un-planned gaseous releases due to inadequate job planning and poor interdepartmental communication.

ENCLOSURE 3 - Continued

CORRECTIVE ACTION

Procedure changes implemented during the SALP 8 period will prevent recurrence of the radioactive material shipping violations.

Zion has implemented a Zion Radiation Procedure (ZRP) to be used when work is performed in the fuel transfer canal. Additionally, Zion has determined that upgrades to instrumentation controls are needed. To that end, an instrument analyst position has been created and filled. This analyst is responsible for ensuring instrument calibrations are current, maintaining servicability of the instruments, and reviewing state of the art instrumentation for potential use at Zion.

Zion has also contracted development of a teledosimetry system. A prototype of this system is currently being evaluated. The purpose of the teledosimetry system is to provide instantaneous remote monitoring of radiation workers while in high radiation areas such as the fuel transfer canal. The teledosimetry system would be used in conjunction with audio communications equipment so that radiation workers can be kept aware of changing conditions as well as the status of their stay time.

A position of Radiation Work Permit (RWP) coordinator has been created and filled to strengthen job planning efforts in the radiation protection area. Pre-job planning summaries are required to be documented by the Health Physicist and post-job summaries/critiques are planned for 1990.

Pre-job briefings for all personnel involved with major work activities in radiation areas are required and are recognized to be good ALARA practices. Pre-job planning summaries are documented by the Health Physicist. Post-job summaries/critiques are planned for 1990.

ENCLOSURE 3 - Continued

MAINTENANCE/SURVEILLANCE

CONCERN

Personnel errors and procedural inadequacies demonstrate a weakness in management involvement to assure quality. The errors and problems involved were not limited to any one station department, but were indicative of a lack of attention to detail.

CORRECTIVE ACTION

Zion has implemented senior management tours to assure quality in all plant operations. Maintenance management tours are designed to focus on maintenance related activities. Zion has also added work analysts in all maintenance departments to provide an accurate, complete, and detailed work package for all jobs to the maintenance personnel performing the work. The attention to detail starts with the work package and will continue to the workers on the job.

CONCERN

Although management involvement was evident by the work in progress on assigned sections to the Conduct of Maintenance programs, implementation of these programs appeared to be lagging. Because of the lack of or ineffectiveness of interim measures, weaknesses such as incomplete work packages, inadequate procedures, and inadequate post-maintenance testing have not yet been corrected by the maintenance pilot programs at Zion.

Several instances were noted where maintenance personnel failed to follow procedures or maintenance procedures were inadequate.

There were instances of maintenance activities performed that were not adequately planned.

Licensee management was not always responsive in dealing with problems and weaknesses identified by NRC inspectors such as work instruction adequacy, work package preparation, documentation of work activities, and repetitive equipment failures.

CORRECTIVE ACTION

Additional work analysts have been added to each maintenance area to support the preparation of more complete work packages. Staffing levels for work analysts is intended to reach a ratio of one work analyst per maintenance supervisor.

ENCLOSURE 3 - Continued

Working committees have been established to set standards in the areas of work package preparation and work practices. These committees meet weekly and provide updates to senior management detailing progress towards successful completion of these efforts. Maintenance standards and expectations in the areas of procedure adherence, troubleshooting and rework have been developed and implemented. Post Maintenance testing has been added to work packages. Zion also requires strict adherence to procedures. A position of procedure coordinator has been established and filled in each of the maintenance areas. A procedure writers guide has been drafted and is currently in On-Site review. Senior management will be monitoring the success of these programs through plant tours, INPO, NRC and Corporate assessments.

Zion has identified personnel error reduction as one of the top three (3) 1990 performance improvement objectives. The Human Performance Evaluation System (HPES) is used to review all personnel error Deviation Reports and Licensee Event Reports. Results of selected HPES evaluations are discussed monthly with senior station management. Corrective actions associated with personnel error events are aggressively monitored and tracked.

A review of other CECOs facility surveillance programs has been completed. A Performance Improvement Plan action plan has been developed to address improvements to be accomplished at Zion. This plan will be reviewed with the NRC during the monthly performance review meetings.

ENCLOSURE 3 - Continued

EMERGENCY PREPAREDNESS

CONCERN

Management involvement in ensuring quality was insufficient during the early months of the assessment period, as indicated by four weaknesses identified during the September 1988 exercise.

CORRECTIVE ACTION

To ensure continued management support and oversight of the emergency preparedness program the EP coordinator now reports directly to senior management at the station.

The open items that resulted from the weaknesses identified during the Full Field Exercise were aggressively tracked until completion. A thorough self-evaluation of Zion's emergency preparedness program resulted in a notable increase in the level of management attention to the program with corrective actions being tracked through the Performance Improvement Plan.

CONCERN

Two problems were identified during the 1989 exercise. Contamination control provisions were inadequate at the Operations Support Center. The licensee also had difficulty keeping State officials informed of shifting wind conditions which could later have affected protective action decision making.

CORRECTIVE ACTION

Procedures for use by the Operational Support Center director have been revised to establish control points and to eliminate eating, drinking or smoking in the event of airborne contamination.

Discussions of the potential for shifting wind conditions were held during table top training sessions during 1989. Wind direction and time parameters were added to the status update board at both the Emergency Operations Facility and the Technical Support Center. Environs Director training has been revised to include a discussion of the potential for wind shifts.

ENCLOSURE 3 - Continued

CONCERN

In early 1988, the licensee identified the need to repair and periodically test the Emergency Operations Facility's (EOF) emergency ventilation system and associated radiation monitor. Equipment repairs, testing, and calibration activities had been completed by mid-1989. However, surveillance procedures to prevent a possible recurrence of equipment degradation had not been completed by May 1989, over one year after the licensee initially identified the problem.

CORRECTIVE ACTION

To assure aggressive completion of emergency planning issues, the station has prepared action plans for each open item identified in the EP inspection reports. These plans, as with all action plans are monitored monthly.

ENCLOSURE 3 - Continued

SAFETY ASSESSMENT/QUALITY VERIFICATION

CONCERN

Management involvement to ensure quality was mixed.

HPES appears to be effective in investigating events caused by personnel error in the area of plant operation; however, the program has not been effective in the area of surveillances.

During this assessment period the licensee was slow in taking timely corrective action of previously identified weaknesses and problems.

CORRECTIVE ACTION

Zion has recently added a full-time station surveillance coordinator to oversee timely completion of surveillance requirements. This individual has been trained in HPES techniques so that missed surveillances and personnel errors associated with surveillance activities can be effectively evaluated.

Missed surveillances are reviewed monthly at Corporate Overview meetings at the station. Deviation Reports associated with surveillance activities will be analyzed in the station's DVR trend report to be issued by March 31, 1990.

The station has also recently added resources in the Regulatory Assurance department to ensure aggressive tracking of station commitments. The commitment tracking system has been expanded to include internal as well as external commitments. This system provides management a tool to monitor all corrective actions.

Management involvement is provided through periodic commitment status reports issued to department heads and senior station management. A goal of zero past due commitments has been established for the station. Progress towards completion of that goal is monitored in monthly station Performance Improvement Plan reviews.

CONCERN

The quality of QA audits conducted by the licensee was mixed. Some maintenance audits were not performance-based and were narrowly scoped, addressing only small portions of maintenance activities.

ENCLOSURE 3 - Continued

CORRECTIVE ACTION

Two Quality Programs inspectors have recently completed performance based auditing training. Two personnel also attended observer training in 1989. The remaining Quality Programs personnel will receive the performance based audit and observer training in 1990.

To enhance quality assessments of licensed activities, a Licensed Senior Reactor Operator with shift experience has been recently added to the Quality Programs staff. Likewise, a maintenance supervisor was recently added to improve oversight of the maintenance area.

The audit and surveillance schedule for 1990 has been refocused toward more performance based overviews. Experienced technical experts from other departments will assist Quality Programs in completion of selected 1990 audits.

CONCERN

The licensee's identification and resolution of technical issues was mixed.

Management at times adopted narrow interpretations of the TS and Final Safety Analysis Report (FSAR) commitments. For example, shortly after the close of this assessment period the NRC determined that the licensee has been operating both units for several months with each train of emergency AC power technically inoperable.

The licensee's response to NRC initiatives was mixed. The cable deficiency walkdown inspection conducted by the licensee in response to the NRC SSOMI finding was effective; however, in most cases the identified problems were not promptly evaluated or properly corrected.

CORRECTIVE ACTION

After a review of the issues raised by NRC, Zion Station determined a need to develop mechanisms which would allow for a more comprehensive and timely review of Technical Specifications as well as development of tools to aid on-shift personnel in making operability determinations. In December 1989, Zion revised its procedure for inoperable equipment to require an independent technical review. As discussed earlier, licensed personnel in the Regulatory Assurance Department are reviewing safety related degraded equipment logs daily to verify that proper interpretations of Technical Specification operability determinations are made. Additionally, Technical Staff personnel are performing technical reviews of work requests for operability concerns. To date, these technical reviews have not identified any inappropriate operability determinations.

ENCLOSURE 3 - Continued

Zion also recognizes that the Technical Specifications are not the only document to be used when making operability determinations. In December 1989, a matrix from the FSAR was developed which defines systems/functions that support Technical Specification equipment. These support systems/functions are to be considered when determining whether a component is operable. While the FSAR matrix was under development copies of all work requests were forwarded to Technical Staff personnel for technical review of operability concerns. To date these technical reviews conclude that no inappropriate operability determinations were made.

To provide additional support to the Operations staff, Technical Staff, and Regulatory Assurance personnel attend daily Operations department meetings. These daily meetings, begun January 4, 1990, were designed to focus all support groups on the Operation's daily priority and to provide a vehicle to discuss abnormalities, test results, etc. that occurred during the previous shifts.

In a December 27, 1989, response to a violation identified during the SSOMI follow-up visit, Commonwealth Edison described corrective actions taken and to be taken to ensure cable tray deficiencies are adequately corrected. Excerpts from that report are provided below.

Zion Station presently employs an engineer with the responsibility of reviewing all work instructions for cable pan system discrepancies on which work has not yet been performed. Engineering involvement in the area of deficiency condition evaluation and technical resolution are required by procedure and are being monitored by the cognizant engineer.

A September 15, 1989 memo from CECO's Engineering and Construction Nuclear Operations to Bechtel Corp. provides for additional instructions to the craft and QC inspectors on how to document work and inspections performed.

An approximate 10 % sample verification has been completed by both CECO and Sargent and Lundy engineering staffs. Because of additional deficiencies noted in the rework during these sample verifications, CECO engineering has expanded this verification to 100 % of the cable deficiency rework performed prior to the implementation of the program upgrades. These deficiencies will be corrected in conjunction with the remaining cable deficiency rework. These sample verifications were completed prior to December 29, 1989.

CECO will perform periodic sample verifications of completed work to assure that deficiencies are adequately addressed. The cognizant engineer will, as required by procedure, document deficiencies for analysis and resolution.

ENCLOSURE 3 - Continued

All pending Nuclear Work Request (NWRs) for cable pan system discrepancies are presently being reviewed for work instruction adequacy. After the above mentioned supplemental walkdown is performed, the enhanced work instructions will be attached to the NWRs and reviewed by the cognizant Technical Staff Engineer prior to releasing the NWRs for implementation. The supplemental walkdown will be completed by June 1, 1990.

Due to the large population of cable pan system discrepancies, corrective actions will be conducted and prioritized per electrical installation zones.

The above described methodology will ensure the adequacy of work instructions prior to performing work for a specific electrical installation zone. This methodology will prevent recurrence of the subject violation.

Since all initial walkdowns for identifying cable pan system discrepancies have been performed, with exception of the Unit 2 containment reactor head bridge (which will be performed during the upcoming Unit 2 refueling outage), the station is confident that all cases of cable separation criteria violations have been identified. However, if any additional cable separation criteria violations are identified by supplemental walkdown or engineering analysis, they will be evaluated according to procedure PI-21-50.

CONCERN

The licensee's submittals in support of license amendment requests were generally inadequate, in most cases additional discussions and submittals were required to resolve the staff's concerns. In some cases, the licensee did not adequately review submittals to ensure accuracy and consistency with the Technical Specifications. The Quality of the amendment requests and the timeliness in responding to the staff's concerns require considerable improvement in order to expedite the licensing process.

CORRECTIVE ACTION

Commonwealth Edison recognizes our responsibility to perform a thorough and timely review of all submittals. We have reviewed our submittal process and identified enhancements that will further our objective of providing licensing products of the highest quality. Nuclear Licensing will enlist the assistance of Corporate Engineering in providing a technical review of submittals, with particular emphasis on the depth of the no significant hazards analysis. In addition, a third party expert review of selected draft submittals will be performed to identify submittal and submittal process improvements. Guidance documents are being prepared to provide standard content and format expectations to personnel involved in the submittal preparation process, as well as the process of requesting technical specification relief.

The following items are offered in order to clarify the SALP 8 report:

ATWS Mitigation Circuitry

Page 22 of the subject report states that although the licensee decided to revise the previously approved design, the NRC was not notified until the start of the outage and the "modification was implemented during the outage". Contrary to this statement, the modification for ATWS mitigation was not installed during the Unit 1 refueling outage. The commitment agreed upon between Commonwealth Edison and the NRC was installation of the modification during an outage that commences 120 days after NRC approval of the modification design. The modification has not been installed in either unit to date.

Installation of the modification is scheduled for Unit 2 during the 1990 Spring refueling outage. The commitment is being tracked in the Nuclear Tracking System (NTS) under #304-170-87-0030 with a due date of May 31, 1990. The installation of the modification on Unit 1 is scheduled for 1991. The commitment is being tracked in the NTS under #295-170-86-0765 with a due date of June 30, 1991. Commonwealth Edison has committed to installing the modification in Unit 1 prior to the 1991 refueling outage if the unit is shutdown for an outage of sufficient duration. After the Unit 1 design package is completed. The Unit 1 design package is expected to be issued by the end of April, 1990. An outage of sufficient duration will be defined upon completion of the Unit 2 installation during the upcoming refueling outage.

Battery-to-bus circuit breaker failures

Page 21 of the subject report states that Zion Station as the licensee failed to identify and resolve the subject breaker failures from a safety standpoint. The report suggests that Zion did not adequately evaluate and correct the generic problem.

It is policy at Zion Station to aggressively pursue corrective actions defined for safety-related equipment failures. Zion does not regard any failure of a breaker to close on the first attempt to be an acceptable condition.

The DC breakers addressed are called the "Battery Feed Breaker" to the associated DC bus. These are manually operated breakers that are only operated quarterly and during a refueling outage. There are no automatic closure requirements for these breakers. The quarterly operation is to allow each DC battery to be equalize charged. During a refueling outage the breakers are operated twice to allow testing of a battery and battery charger. The DC bus is always crosstied to another bus before the battery feed breaker is opened.

Difficulties were experienced during the performance of these tests in the reclosing of the Battery Feed Breakers. Work requests were generated and an investigation into the difficulties was started.

An engineering evaluation has been completed that demonstrates that the failure of these breakers to close does not have safety significance. As long as the breaker does close, the operability requirement is met. If a breaker did fail to close, the Technical Specifications on DC Batteries and distribution system would be followed.

An interim action requires the Technical Staff engineer to trend and evaluate the number of attempts needed to close the breakers. For information purposes, only two of the six breakers have a history of not closing on the first attempt. These two breakers have always closed on the second attempt.

A longer term plan includes the procurement and replacement of these breakers. The initial breakers purchased for replacement were from Satin America and arrived on site in 1988. Given the material traceability concerns associated with Satin America breakers, discussions are being held with General Electric on purchasing new breakers or refurbishing the Satin America breakers. Discussions will be completed by January 31, 1990. Procurement of the new breakers onsite will be dependent upon the manufacturing lead times.

ENCLOSURE 4 - Continued

Negative bias with respect to laboratory results

Page 11 of the subject SALP report states that "A pervasive negative bias was noted in all media analyzed". Approximately two thirds of the Station's results were lower than the NRC results. While this position is supported by an internal audit performed by the Commonwealth Edison corporate chemistry group for the one hundred(100) samples, the negative bias is not indicative of the chemistry program taken as a whole. Investigations to determine the reasons for the 100 sample bias suggest sample preparation and placement of samples in counting geometry as the most probable cause. The Chemistry Technicians were counseled as to the results of poor technique and are being monitored by Chemistry supervision.

The potential problem of a long term systematic bias in the counting room has been addressed by review of data developed in the course of participation in the radiochemistry interlaboratory program and review/comparison of detector calibrations between 1988 and 1989.

Based on interlaboratory data collated by the Chemistry Department for the four quarters ending SEP89, Zion Station reported 105 gamma spectroscopy measurements. Of these, 51 were greater than the reference value, 46 were less, and 8 were in perfect agreement. Allowing a 3% band around the reference value, 67 samples were in agreement, 22 were greater, and 16 were less than the reference. This data was collected before and after the NRC split.

As annual calibrations have become due for detectors, new NBS traceable standards were measured on the old calibrations (precalibration), new calibrations performed and a comparison made between the old and new calibration curves defined by the software.

The comparison between precalibration and recalibration showed no result greater than 11% and most within 5%.

Currently, 22 new calibration curves have been generated. Comparison of the average differences of the calibration efficiency curves generated between the 1988 calibrations(used for the NRC split sample) and the 1989 calibrations were in the range of 0.5% to 6.03%. The 6.03% was in a geometry not used during the NRC sample split. Excluding averages less than 3%, four curves indicated increased efficiency in 1989 and two decreased efficiency.

The interlaboratory program data, the precalibration data and the comparison of efficiency curves for the new calibrations suggest that the apparent bias in the NRC split sample was unique to that data set.

ENCLOSURE 4 - Continued

Containment Spray System Inoperability and the associated LCO Clock

The subject report states on page 6 that the unit exceeded a 48 hour LCO action statement when a suction path to one train of containment spray used during the recirculation phase was inoperable. It is the position of Zion Station that in the event of a single failure of RHR containment spray valves 1(2)MOV-CS0049 or 1(2)MOV-CS0050, the station will administratively treat the failure as a 7-day LCO clock (when the unit is above Cold Shutdown). A Technical Specification change will be submitted which will add the recirculation phase to the Tech Specs. No additional surveillances will be required during the seven day period.

The 7-day LCO clock is being administratively taken to reflect the importance of RHR spray during the recirculation phase of a LOCA.

In December 1989, a matrix from the FSAR was developed which defines systems/functions that support Technical Specification equipment. These support systems/functions are to be considered when determining whether a component is operable. This action will provide Operators and other Station personnel with additional guidance necessary to make the correct operability determination.