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April 16, 1982

Mr. R. C. Haynes, Regional Administrator
United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Reference: Beaver Valley Power Station, Unit No. 1
Docket No. 50-334, License No. DPR-66
Systematic Assessment of Licensee Performance (SALP)

Gentlemen:

This letter forwards our response to the Systematic Assessment of Licensee Performance (SALP) for Beaver Valley Power Station, Unit No. 1. This response addresses the concerns noted in the two functional areas categorized as Category 3 by the SALP Board. These functional areas include Maintenance and Security and Safeguards.

We believe that we have made substantial progress during 1981 in improving our overall performance, and we are confident that the additional measures which we have taken, and plan to take, will result in significant additional improvement. We have developed methods to monitor our own progress and we are prepared to adjust our program as necessary to attain and maintain an excellent standard of performance.

If you have any questions regarding this response, do not hesitate to contact me.

Very truly yours,

J. J. Carey
Vice President, Nuclear

Attachment

cc: Mr. D. A. Beckman, Resident Inspector
United States Nuclear Regulatory Commission
Beaver Valley Power Station, Unit No. 1
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United States Nuclear Regulatory Commission
c/o Document Management Branch
Washington, D. C. 20555

DUQUESNE LIGHT COMPANY
Beaver Valley Power Station
Unit No. 1

Reply to Systematic Assessment of Licensee Performance

Maintenance (Report Item #3)

RESPONSE

An evaluation of the Beaver Valley Maintenance Program was initiated during the Report assessment period. The evaluation was completed at about the mid-point of the assessment period and was reflected in the establishment of the Nuclear Division in March 1981.

The revised maintenance organization reduced the span of responsibility of the Station Maintenance Supervisor and included additional positions for technical and first line supervisors.

Organization

The revised maintenance organization includes electrical and mechanical maintenance with the instrumentation and control responsibility being placed under a new senior supervisor reporting directly to the Station Superintendent.

The maintenance organization previously included seven foremen reporting to four maintenance engineers who in turn reported to the Station Maintenance Supervisor. The revised organization (maintenance and I & C) doubles the number of foremen and maintenance engineers which permits increased attention and involvement in a reduced area of responsibility.

The establishment of a completely separate instrument and control section has relieved the Station Maintenance Supervisor of this workload and thereby enables him to maintain greater control of the balance of the on-going maintenance activities.

Increased staffing in the engineering organization has resulted in more timely and thorough engineering support of station problems.

While the new organization is not completely staffed, the additional manning has produced benefits in the identification and response to instances of repetitive equipment failures and in management of the maintenance work load.

Maintenance (Continued)

Identification and Evaluation of Repetitive Equipment Failures

To provide better evaluation of repetitive equipment failures, trend analysis of safety-related equipment failures will be performed by the technical advisory group.

As a result of increased technical staffing in the maintenance section, it has been possible to obtain a more indepth review of specific equipment failures during maintenance activities to insure proper corrective action has been taken.

The following actions have been taken in regards to the repetitive failures identified in the draft Report.

1. Vital bus inverters #3 and #4 are being replaced during the second refueling outage. The performance will be compared with the older inverters and appropriate action taken.
2. A new motor was installed on the motor driven fire pump (FP-P-1) to increase reliability. Duquesne Light Company Engineering is presently re-evaluating the design and materials utilized in the underground piping system to preclude line breakage.
3. Deficiencies in the degasifier system heat exchangers will be corrected by Design Change Package 539 which has determined the method of repair. Final engineering will be started this month.
4. The RCS Loop 1 flow instrument malfunctions were caused by a single faulty transmitter. The transmitter was replaced and satisfactory surveillance has been performed on RCS Loop 1 instrumentation.
5. The RWST level instrument drift problem appeared to have been caused by improper venting of the transmitters low pressure process connection. The proper vent plug was installed. The transmitters were calibrated satisfactorily and appear to be operating properly. These transmitters will be monitored to determine if the problem has been corrected.

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Maintenance (Continued)

6. Velan check valves were experiencing binding of the discs. A design change was initiated and is being worked at this time. The design change will be complete by the end of the 1982 outage.
7. The out-of-service indicators and annunciators in the control room were given a higher priority by I & C supervision. The number of indicators and annunciators out-of-service has been significantly reduced.

Management Control of the Maintenance Work

Management control of the maintenance workload was improved by assigning additional staff to the maintenance organizations. This enabled the station staff to better define the workload and associated problems.

1. A new position of Senior Instrument and Control Calibration Engineer with two Instrument and Control Foremen reporting to him was created. This allowed one branch of the new instrument and control group to devote full time to reviewing and scheduling instrument calibrations. This work was previously done by the Instrument Engineer on a low priority basis.
2. To provide management with a more accurate and up-to-date status of maintenance and control work, it was necessary to improve the Computer Backlog Report. The method of reporting completion information for updating the backlog report was changed and backlog updates are now performed on a weekly basis.

Use of the backlog report by management as a means to periodically assess maintenance and instrument and control progress has been implemented to provide better control of maintenance work load. The backlog report is reviewed on a quarterly basis to assess performance. During extended outages the backlog report is reviewed by each discipline with planning and scheduling on a weekly basis.

Increased emphasis on completion of maintenance tasks has resulted from use of the backlog reports.

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Maintenance (Continued)

3. Because of concerns with long times between non-category I instrument recalibration, a list of non-category I instruments used by the operator in response to abnormal and emergency procedures was made. Procedures were prepared and calibrations have been performed on most of these instruments. The as-found data has verified that over 90% of the instruments did not have significant errors in the operating range. It is expected that all the instruments on this list will be calibrated prior to plant start-up. Additional emphasis has been placed on the timely calibration of non-safety related instrumentation.

During the past six months, increased emphasis of the importance of quality in maintenance activities has been initiated by station management including training provided by the Quality Assurance Department in the revised QA Training Program provided to all station employees. Increased awareness and sensitivity to quality issues will continue through use of bulletin board presentations and work group meetings.

Security and Safeguards (Report Item #7)

DEFICIENCIES

Routine and special inspections during the period identified the need for additional management attention to:

1. Guard force training and performance as factors in incidents and violations.
2. Security computer and computer auxiliaries, software problems, system capacity problems, and system debugging. (Note: Overall system performance has improved since the end of assessment period but chronic problems e.g., uninterruptible power supply performance and software problems, persist)
3. Improper implementation of compensatory measures when intrusion detection and surveillance equipment is degraded.
4. Contractor guard force management policies for personnel disciplinary problems, overtime work, and attrition.

RESPONSE

1. We have given additional management attention to guard force training and performance as factors in incidents and violations.

The unsatisfactory performance noted in the report can largely be attributed to the quality and content of the security training program. Duquesne Light Company and its security contractor have taken positive steps to implement significant improvements in the security program.

- a) The Duquesne Light Company Security Staff has been increased from one to three. The Duquesne Light Company organization includes a Director of Security, a Security Assistant and a Security Training and Procedures Coordinator. This provides total overview and control of the security contractor's operation.
- b) Since August of 1981, the Security Training Department has accomplished the following tasks:
 - 1) Formulated professional lesson plans depicting the requirements delineated in the Training and Qualification Plan (TQP). Prior to August the Security Training Department taught from ten (10) Lesson Plans. Today, lessons are given using forty-seven (47) plans.

Security and Safeguards (Continued)

- 2) Training has shifted from an unorganized training schedule to a Module System of testing.
 - 3) Audio visual use and word picture testing have upgraded the quality of the program.
 - 4) Tasks are taught with professionalism and the level of instruction has increased significantly.
- c) February 1, 1982, the training program began for the revised TQP. In addition to the task oriented training, Supervisors are given forty (40) hours additional Supervisory Training in Communication Skills.
- d) November 9, 1981, Security implemented a training consultation for individuals who demonstrated poor performance. This completed a tie between site deficiencies and possible training deficiencies.
- e) During October of 1981, the Division and Contractor Management began to conduct personal interviews to discuss performance and deficiencies.
- f) While the Beaver Valley Security Plan has been implemented, a total review by the Duquesne Light Company Security Staff is now in progress. This review will require several months and should identify any weaknesses or deficiencies in the plan as it now relates to the new Division organization.
2. Additional attention has been given in the area of security computer and computer auxiliaries, software problems, system capacity problems, and system debugging. (Note: Overall system performance has improved since the end of assessment period but chronic problems, e.g. uninterruptible power supply performance and software problems, persist)
- a) Late December of 1981, the memory plus was installed on the security computer. Since that time, the computer capacity has increased and problems have almost disappeared.
 - b) System debugging has been going on since installation during February 1981. During the month of December, training was conducted for station personnel on the proper use of the key card.
 - c) Duquesne Light has increased the level of understanding and communications with Johnson Controls Inc. (JCI). In October of 1981, a procedure was written and implemented for inputting software changes into the computer. This procedure consisted of testing and sign-off acceptance which enforced Quality Control. In addition, to the procedure, JCI was restricted in the manner in which they inputted into the computer. Each input change is now being conducted as a single input, not a mass input, and tested before proceeding to the next change.

Security and Safeguards (Continued)

- d) Considerable engineering effort has been expended to resolve the uninterruptible power supply (UPS) problem.
 - 1) We have conducted an examination of output of the UPS voltage wave form using an oscilloscope. No abnormalities or noise superimposed on the output wave shape have been detected.
 - 2) Since the problem has been one of numerous alarms, the analysis of this problem has been directed to supervisory alarm circuitry. Noise could affect the supervisory alarm continuity check by imposing a momentary loss of voltage signal. Timing of the supervisory alarm sensing devices has been evaluated to determine whether these devices are set too sensitive. Duration of a spurious voltage signal due to noise of over 64 milliseconds (0.064 seconds) could result in alarms.
 - 3) Tests indicate that the problem is caused by noise, but isolating the noise source has not been achieved.
 - 4) Isolating transformers were installed in the multiplexer circuits to filter out noise. No improvement was seen.
 - 5) Grounding and shielding have also been evaluated. Some RF noise has been found in the multiplexer circuiting and further tests are in progress.
- 3. As a result of improper implementation of compensatory measures when intrusion detection and surveillance equipment is degraded, we have accomplished the following:
 - a) An increased number of personal interviews with security personnel have been performed.
 - b) Training has been conducted relative to improper implementation of procedures.
 - c) In July 1981, Duquesne Light Company contracted a procedures writer. Since his employment in July, he has written 98 post orders, instructions and/or procedures. These written communications have improved security awareness and reinforced the importance of proper procedure implementation.
- 4. The following steps have been taken concerning contractor guard force management policies for personnel disciplinary problems, over time work, and attrition.

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Security and Safeguards (Continued)

- a) The Contractor has implemented a disciplinary action procedure to ensure problems are handled uniformly. Contractor personnel have been made aware of the "rules" and consistency in enforcement has been applied based on the new disciplinary philosophy. It is believed improvements in guiding and directing behavior in a positive manner will be achieved.
- b) The contractor labor agreement does not allow denial of overtime; however, the contractor recognizes his responsibility to ensure his work force is alert. As a result, the contractor has already tracked overtime hours, and in some instances denied overtime due to excessive hours and fatigue.
- c) Attrition has been reduced considerably and is only 20% of the attrition rate experienced during the 1980-1981 report period.

Duquesne Light Company believes the above corrective actions demonstrate management involvement and are substantial enough to result in considerable improvement in the Security Program at Beaver Valley.