



Nuclear Group
Quality Assurance Unit
Box 184
Shippingport, PA 15077

July 19, 1985
2NRC-5-105

United States Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

ATTENTION: Dr. Thomas E. Murley, Regional Administrator

SUBJECT: Systematic Assessment of Licensee Performance (SALP)
Report No. 50-412/85-99

Gentlemen:

Thank you for meeting with us on June 19, 1985 to discuss the Beaver Valley Power Station Unit No. 2 SALP Report for the period of April 1, 1984 through March 31, 1985.

In addition to the items discussed at the June 19th meeting, the following items summarize the actions taken or planned to be taken to address the concerns which were identified in your letter of June 7, 1985:

Section IV.2 - Piping Systems and Supports

Section IV.2 identified an area of concern regarding control of reworked items, specifically pipe supports. This item was originally identified by DLC in mid-1984 as a potentially significant deficiency (SDR-84-06). As outlined in the final report for SDR 84-06 (letter 2NRC-4-200 dated 12/3/84), corrective actions taken to improve control over reworked pipe supports have included:

- . Issuance of FCP-41 to formally document and track the requirements applicable to dismantled or partially dismantled items, components, or structures which have been previously SQC inspected.
- . Issuance of SQC IP 7.45 to provide an SQC over-view of this area and ensure site compliance with the requirements of FCP-41.
- . Assignment of an SQC inspector to perform surveillance of the above program to provide assurance that the intent of the program is being fulfilled.

Subsequent to the above noted concerns with pipe supports, the NRC

8507240271 850719
PDR ADOCK 05000412
Q PDR

110
1E 40

issued Violation 85-02-01, regarding the disassembly of a safety-related valve without appropriate authorization or documentation being issued. As a corrective action regarding this problem, Site Project Management has directed the electrical and mechanical contractors to re-emphasize to appropriate personnel the requirements for strict adherence to the site rework control program; personnel failing to comply with rework control procedures will be subject to disciplinary action. To prevent similar occurrences in the future, designated contractor Building Managers are now a focal point for any rework of previously installed permanent plant equipment, and are responsible for assuring that such rework complies with all rework requirements.

Section IV.5 Electrical Power Supply and Distribution

The NRC's concerns for this area can be divided into two distinct categories, specific concerns and general concerns. The specific concerns have been identified as NRC Unresolved Items or Violations or reported on Significant Deficiency Reports. These specific issues have involved several aspects of the electrical design and installation process at BVPS-2, as well as all organizations involved in the process. All of these specific issues have been previously addressed as NRC Open Items and are being tracked to ensure timely resolution and completions. Certain of the issues have precipitated changes in the procedures or processes governing electrical activities within engineering, SQC, or the electrical contractor. Many of the issues have already been resolved to the NRC's satisfaction.

The NRC's general concerns are the following:

"(Licensee is to) complete development of an overall comprehensive plan to address and resolve problems in this area. Implement an integrated plan for timely resolution of remaining outstanding electrical issues. Complete reinspections and rework prior to system turnover."

As stated above, the resolution of remaining outstanding electrical issues is currently on-going and receives high priority. The BVPS-2 Project NRC Open Items List provides concise information regarding the status for these NRC items. This report is utilized by management personnel to ensure that all items receive timely attention.

An integrated and detailed plan, entitled the Electrical Plan Guide (EPG) has been developed and was issued for official project use and information on June 10, 1985. It describes the plans for resolution of engineering items and completion of construction and inspection activities on tasks important to the electrical effort. The plan will be kept up to date on a quarterly basis.

The Project recognizes that systems are being turned over for the construction proof testing activity with outstanding items. The previously referenced EPG defines all of these required actions and the reinspection/verification of the conditions reported has commenced.

The Project has recently undertaken an overall review of the BVPS-2

electrical installation specification, the electrical Field Construction Procedures, and the SQC electrical Inspection Procedures. The objective of this review is to ensure consistency among these documents, and to ensure each document is complete regarding its purpose. The review of the electrical installation specification will identify the bases used to develop the various numerical limits and requirements specified and will provide assurance that calculations, codes, or standards used as bases for the specification are properly documented. These reviews, and any necessary corrective actions are scheduled to be completed by September 30, 1985. Finally, the staffs of both the Site Engineering Group and the Integrated Construction Support Group have been strengthened through the addition of senior experienced electrical engineers. The introduction of these individuals has improved the interface among engineering, construction, and quality control.

Section IV.6 Instrumentation and Control Systems

The SALP Report discussion of this functional area identified the following areas as needing improvement:

- a) The engineering and design process regarding QA Category I instrumentation tubing.
- b) Engineering and construction efforts to ensure compliance with R.G. 1.75 separation requirements for internal panel wiring.

Actions which are being taken to address these issues are summarized below:

- a) The NRC's concerns with the engineering and design process for QA Category I instrumentation tubing are summarized in the SALP Report as follows:

"The three violations involving the installation of instruments and instrument tubing were the result of inadequate engineering design review and ambiguity in the specification and are indicative of a problem in this area. Specifically, onsite engineering failed to translate sufficient information from composite drawings to single line construction drawings used by craft and QC personnel. The insufficient information in these drawings regarding installation and construction criteria such as instrument type, tubing size, location, separation, slope and routing led to problems involving inadequate separation of redundant tubing, mounting of redundant instrument tubing on the same support, and failures to mount instrument vents and drains to direct the discharge away from personnel and electrical equipment.

The licensee and SWEC took rapid corrective action by issuing a stop work order on the installation of instrument tubing pending an engineering review and resolution of the discrepancies. The licensee has proposed tighter engineering controls, but still does not require Quality Control personnel to verify separation criteria for instrument tubing."

The following points are drawn from letter 2NRC-5-078 and serve to respond to the NRC concerns quoted above:

- . A review of specification 2BVS-977 and the engineering and design process was initiated in an effort to establish that all necessary requirements regarding separation criteria were present, consistent, and understandable.
- . The specification review was completed and 2BVS-977 was revised to enhance the clarity of various sections. Also, site procedure 2BVM-228 for the design of instrument tubing in seismic areas was issued, and SEG engineers and designers were trained in the use of the procedure.
- . A review of all issued isometric drawings was completed to assure that all tubing separation deviations or mounting deficiencies were appropriately identified and dispositioned. No hardware modifications have resulted from this review.
- . Regarding the installation of vent and drain lines on instrument tubing lines, administrative procedures are being revised to ensure that, where necessary, potential effluent discharges will not present any hazards.
- . A review of instrument tubing installation drawings was completed and indicated that, aside from the separation issues discussed above, the drawings contained sufficient information regarding instrument type, tubing size, location, slope and routing, as necessary.
- . The STOP-WORK order was released once necessary actions were completed to ensure the adequacy of continuing work on QA Category I instrument tubing.

In addition to the above actions, the following steps have been taken to further address concerns in this functional area, and to provide an additional level of assurance that the instrument tubing and design process is of the highest quality:

- . A review of 2BVS-977, pertinent Field Construction Procedures and SQC Inspection Procedures, will be conducted to ensure that these project documents are complete and consistent with each other regarding instrument tubing design and installation activities. This review, including any necessary corrective actions, will be completed by September 30, 1985.
- . Engineering is providing SQC with engineering information necessary to develop inspection procedures for SQC verification of the spatial separation of safety-related redundant instrument impulse lines. The necessary SQC and project documents to ensure this verification are scheduled to be issued by September 30, 1985.

- b) The NRC's concerns regarding electrical panel internal wiring separation reviews that were conducted without SQC participation have been fully addressed in DLC's letter 2NRC-5-073 dated 5/17/85. As stated in the letter, the engineering review to determine separation discrepancies was not outside the DLC QA Program. The subject panels were scheduled to receive a final SQC inspection following completion of the engineering activity. This SQC inspection activity has commenced.

In addition, the NRR has been provided with the "BVPS-2 Electrical Separation Verification Testing Report", which provides justification for the explicit separation criteria being used in the evaluation of Class 1E electrical equipment at BVPS-2.

Finally, pertinent project documents have been revised to include explicit separation requirements applicable to electrical panels that contain both external wiring (field installed) and internal wiring (vendor supplied). Further details regarding this issue will be developed to address NRC Unresolved Item 85-05-05.

A significant number of corrective actions have been initiated and completed, and it is our opinion that, while a significant amount of instrumentation work is required to complete the project, no major changes to the existing administrative controls are necessary to achieve full compliance with NRC regulations.

Section IV.8 Storage of Safety Related Components

The NRC discussion of this functional area refers to a variety of storage problems that have previously been identified as Unresolved Items, Violations, or SDRs. A majority of these individual items represented deviations from BVPS-2 in-plant storage requirements, and required various corrective actions. To date, most of the specific storage problems have been resolved with the NRC. In addition, as the NRC has acknowledged, strong and extensive action has been taken to improve storage conditions at BVPS-2, including:

- . assignment of contractor personnel as permanent Building Managers, with direct responsibility and accountability for overall care, custody and control of installed equipment, until turnover to SUG.
- . establishment of a Composite Review Work Group (CRWG), with broad contractor, SWEC, and DLC involvement, to identify weaknesses with storage requirements/procedures or with physical in-plant conditions.
- . formation of a Management Oversight Committee (MOC) to assess the overall effectiveness of the storage program, and provide continuing and visible management attention in this area.

The evaluation of this functional area included a recommendation that the licensee "provide continuing management overview to preclude recurrence of past cyclic performance in this area."

Management attention to the storage program at BVPS-2 will continue. The

CRWG, MOC, and Building Manager system discussed above will be maintained as the primary vehicles for ensuring adequate in-plant storage conditions.

Section IV.9 Engineering/Construction Interface

The evaluation of the engineering/construction interface at BVPS-2 reflects the progress achieved to date in the ongoing programs established in response to weaknesses identified in this functional area during previous SALP assessment periods. However, two concerns remain:

- a) "In the electrical and instrumentation functional areas, some lingering interface problems still exist..."
- b) "Management must continue to be sensitive to the engineering/construction interface in all functional areas to ensure that the recent improvements remain until the project is completed."

Actions which are being taken to address these concerns are as follows:

- a) Initiatives which have been taken to enhance the engineering/construction interface for the electrical and instrumentation controls areas are discussed under Section IV.5 and IV.6 of this document.
- b) Project Management has taken various steps to improve the BVPS-2 engineering/construction interface, including initiation of the BVPS-2 Engineering Confirmation Program, establishment of Constructibility Review Teams and the Integrated Construction Support Group, issuance of the project Electrical Plan Guide to provide an integrated and concerted approach for the resolution of electrical issues, and assignment of experienced individuals to various site positions which involve direct contact with construction forces.

Executive management has instituted a scheduled weekly meeting that involves senior site personnel from the Engineering, Construction, Startup and QA/QC departments. The prime function of this meeting is to ensure that potential interface problems are identified at the earliest possible time and that appropriate actions are taken to ensure that timely resolutions are obtained. It is considered that these face to face discussions assist executive management in maintaining the improved engineering/construction interfaces described in the SALP Report.

- c) With reference to the three specific items of concern described by the NRC in the CTI Report, DLC's response identifies the actions taken to address cable pulling practices (85-07-05) and lack of documentation of calculations related to cable tension/side-wall pressure (85-07-09). Further details describing our actions with reference to Unresolved Item 85-07-07, torque requirements for circuit breakers, will be developed.

Section IV.10 Preoperational/Startup Testing

The BVPS-2 Startup Group provides direct and timely knowledge of plant status, and includes determination of turnover acceptability of systems/subsystems. The acceptability of a system/subsystem is based upon the readiness for satisfactory performance of construction proof testing and does not imply that the system/subsystem is ready to perform activities other than construction proof testing. Accordingly, the number of open items can be higher when a system/subsystem is turned over at the construction proof test phase than at the system testing phase (system operability verification tests and preoperational tests).

The DLC SUG has established a three phase program for the formal review and acceptance of plant systems by DLC: the initial phase defines the turnover of systems/subsystems from construction to DLC SUG to perform construction proof testing, the second phase requires a system review release for the performance of system operability verification (SOV) and/or Pre-operational (pre-op) test activities, and after completion of the SOV and/or pre-op testing, the final phase requires a system acceptance release by DLC Nuclear Operations personnel.

Field Construction Procedures have been revised to add additional controls, specifically identify and assign responsibilities and provide greater detail regarding implementation of the turnover program. These procedures require appropriate certification of personnel, programmatic review of system/subsystem completion status and identification of uncompleted items by the site contractor. A formal review and concurrence by Building and Milestone Managers that the system/subsystem is ready for turnover, and SQC verification of the construction status prior to submission of the turnover package to SUG for acceptance is required. This process is functioning to turn over systems/subsystems for construction proof testing with a recognizable reduction in the number of discrepancies or nonconforming conditions reported.

All site organizations have become more proactive in ensuring that systems/subsystems are more complete prior to turnover. Senior DLC personnel have been assigned within the electrical contractor's site organization. The rework construction activities are directed by a senior DLC construction representative working within the Construction Management site organization. Additionally, field construction supervision with greater contemporary experience in systems/subsystems completion and turnover have been assigned. The assignment of the personnel described ensures accurate and thorough identification of system/subsystem status and approves and coordinates all construction work to be performed on systems/subsystems that have been turned over for testing.

Section IV.11 Quality Assurance and Administrative Controls

Duquesne Light management has discussed the NRC concern regarding organizational changes wherein the QA/QC function reports to the Nuclear Group Vice President. It must be recognized that cost and schedule concerns and quality concerns must be addressed by a key individual at some level of management. In Duquesne Light, this occurs at the Nuclear Group Vice President level, who reports directly to the Chairman of the Board and President of the Company. It should also be noted

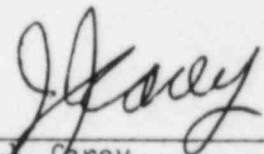
that the Manager of Quality Assurance may go directly to the President of the Company with quality matters. In addition to the normal reporting chain, quality matters can also be discussed at the weekly BVPS-2 Site Managers Meeting, at the Vice President of Nuclear Group's biweekly BVPS-2 Staff Meeting, and at the bi-monthly Project Management Committee Meeting. Duquesne Light management is committed to assuring the high quality of BVPS-2 and will continue to monitor quality trends to ensure that cost and schedule concerns do not adversely affect the quality of the plant.

DLC management has established a quality organization which is totally independent of the engineering/construction/startup organization. The Quality Assurance Manager is provided with adequate resources to ensure that the inspection activity can be accomplished in a timely manner to enable the construction work to proceed in an orderly manner.

We recognize that the project organization has undergone an evolution during the period covered by this SALP Report. The Management Analysis Corporation has been retained to review our existing organization and to provide recommendations on the desirability of adding additional key personnel to assist us in the completion of the project. We expect the results of this review to be issued in September. We will inform you of any planned changes to the project organization personnel that are made as a result of this review.

We believe that the BVPS-2 Project has one of the finest quality programs in the industry and we will continue to provide the necessary support to assure the independence and integrity of the existing program.

DUQUESNE LIGHT COMPANY

By 
J. J. Carey
Vice President

CEE/jh

cc: Mr. B. K. Singh, NRC Project Manager
Mr. G. Walton, NRC Resident Inspector
NRC Document Control Desk