Arizona Public Service Company

July 25, 1984
ANPP-30031-EEVBJr

U. S. Nuclear Regulatory Commission
Region V
Creekside Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, CA 94596-5368

Attention: Mr. T. W. Bishop, Director
Division of Resident
Reactor Projects and Engineering Programs

Subject: NRC Region V Systematic Assessment of Licensee Performance
File: 84-056-026; D.4.33.2

Dear Mr. Bishop:

Your letter of June 11, 1984, to Arizona Public Service Company (APS), to my attention, transmitted a copy of the report entitled "U. S. Nuclear Regulatory Commission, Region V, Systematic Assessment of Licensee Performance, Palo Verde Nuclear Generating Station, May 1984" (the "SALP Report"), together with a Notice of Significant Licensee Meeting to be convened at Region V's offices on June 27, 1984, to discuss the SALP Report. Subsequently, pursuant to notice, the date and location of such meeting were changed to July 5, 1984, at Palo Verde Nuclear Generating Station.

Accordingly, on July 5, 1984, APS management did meet with the Regional Administrator, yourself and other members of the SALP Board to discuss the SALP Report.

Your letter of June 11, 1984, also directed us to inform you "within twenty days after such meeting of those actions [we] have taken or plan to improve performance within areas assessed as Category 3 and requiring additional NRC and APS attention." The attachment to this letter is submitted in response to such direction in your June 11, 1984 letter.

Very truly yours,

E. E. Van Brunt, Jr.

E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVBJr:ru

Attachment

cc: See Page Two

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cc: Richard DeYoung, Director
Office of Inspection and Enforcement
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

K. L. Turley
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STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

I, Edwin E. Van Brunt, Jr., represent that I am Vice President, Nuclear Production, Arizona Public Service Company, that the foregoing document has been signed by me on behalf of Arizona Public Service Company with full authority to do so, that I have read such document and know its contents, and that to the best of my knowledge and belief, the statements made therein are true.

Edwin E. Van Brunt

Edwin E. Van Brunt, Jr.

Sworn to before me this 24th day of July, 1984.

Dora E. Meador

Notary Public

My Commission Expires:

My Commission Expires April 6, 1987

RESPONSE OF

ARIZONA PUBLIC SERVICE COMPANY

TO THE REPORT OF

U.S. NUCLEAR REGULATORY COMMISSION, REGION V

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

FOR THE PERIOD MARCH 1, 1983 THROUGH MARCH 31, 1984

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SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

FOR THE PERIOD MARCH 1, 1983 THROUGH MARCH 31, 1984

Section 1.0 Introduction

The Systematic Assessment of Licensee Performance (SALP) program was established by U.S. Nuclear Regulatory Commission (NRC) to provide a periodic evaluation of licensee performance based on observations and data collected during a given SALP period. Such evaluations are made for the purposes of providing --

(i) a basis for allocating NRC resources, and

(ii) meaningful guidance to licensee management to promote quality and safety of plant construction and operation.

Such guidance is provided in the recent SALP Report (May, 1984) through a number of recommendations in those functional areas receiving substantial inspection during the SALP period, i.e., March 1, 1983, through March 31, 1984.

This response to the May, 1984 SALP Report is intended to describe the actions which have been or will be taken by licensee Arizona Public Service Company (APS) consistent with the guidance provided by the SALP Report

recommendations. For the most part, such actions have already been implemented or are in advanced stages of implementation, and they have been reported previously to NRC (for example, see APS' Response to the enforcement actions taken by NRC as a result of the Construction Assessment Team (CAT) inspection in September, 1983).

This approach, which avoids argument respecting the bases for several recommendations, is taken deliberately to emphasize APS management's dedication to quality and safety in the construction and operation of Palo Verde. Even though there may be some disagreement respecting some of the analyses and conclusions in the May, 1984 SALP Report, APS management agrees with and accepts the SALP Board's recommendations. To do otherwise would only obscure the intent of both APS and NRC that everything necessary be done to make Palo Verde a safe and reliable plant.

The response that follows addresses all of the recommendations in the May, 1984 SALP Report in the order in which they were made.

Section 2.0 Startup Testing
(SALP Report, Section IV. O.1.a)

Board Recommendations:

> "The Board recommends that the licensee consider minimizing further organizational and administrative control program changes during the balance of the test program, and that additional emphasis be placed on improved communi-

cations, more thorough understanding and implementation of existing programs, and the execution of more thorough analysis of the root causes of problems so that more effective resolutions can be implemented."

Response:

2.1 Stability of Organization and Controls

APS management recognizes the importance of maintaining stability in organizational structures and administrative controls. At the same time, however, management has had the ultimate objective of achieving improvements in effectiveness. Needless to say, one cannot take the advantages of improvements without accepting the disadvantages that may go with changes.

The changes made in the APS management structure, the establishment of the Transition Manager, the redefinition of responsibilities of the several APS, Bechtel and CE organizations involved in the transition from construction to operation, the enhancement in communication among such organizations, the changes in work controls and procedures, and the training in the modified controls procedures were actions taken to improve effectiveness. We believe they have been proven successful, and consequently, we can now give attention to maintaining stability.

The resumption of "Q" Class work and startup testing on "Q" Class systems last February was initiated deliberately on a gradual, limited basis in large measure to

test the effectiveness of the changes made in organization and controls, to identify areas where adjustments might be warranted, and to obviate the need for major changes after full-scale resumption of work and startup testing. One of the considerations in adopting this gradual approach was that it offered the chance to minimize the adjustments in controls after full-scale resumption and thus promote stability.

The results achieved since resumption (most significantly reflected in quality performance very close to a schedule required for a November, 1984 fuel load) have demonstrated that the current organizational structure and administrative controls are effective. Consequently, it is not anticipated that major changes will be required in the foreseeable future.

Nonetheless, management will be alert to the desirability of fine tuning adjustments which can improve quality and effectiveness without disruption.

2.2 Improving Communications

Additional emphasis has been placed on improving communications, a more thorough understanding of existing programs, and a more thorough implementation of such programs.

The first step taken in the effort to improve communications was the organization of the Project Management Interface Task Force (PMITF) composed of managers and

supervisors of the APS and Bechtel organizations having responsibility for activities during the startup phase. The functions of PMITF were (i) to perform root cause evaluations of problems disclosed by the CAT inspection and the extensive internal audits conducted by APS, and (ii) to develop and recommend solutions to identified organizational interface problems. The intensive, coordinated work of PMITF during December, 1983, and January, 1984 necessitated virtually continuous communication of the interfacing organizations involved in the startup phase and laid the framework for the subsequent steps in improving communications.

The second step taken was the consolidation in January, 1984, of the APS Construction, Engineering, Startup and Operations organizations under a single vice president. This was followed by the establishment of the Transition Manager responsible for coordination of the interfacing organizations during the transition from the construction phase through the startup phase to full power operations. Scheduled daily meetings of the Transition Manager and the managers (or their respective representatives) of the interfacing organizations are key elements in the improvement in communications.

The third step which improved communications was the review and acceptance of selected interfacing procedures by affected organizations and institution of a comprehensive training program to the new procedures prior to the restart of "Q" Class work and startup testing.

Finally, APS adopted in May, 1984 a Project Procedure Interface Control Policy which identifies interfacing procedures and (except in emergency situations) prohibits changes or additions to those identified interfacing procedures without prior review by affected organizations and resolution of their comments.

All of the foregoing steps have resulted in improved communications between interfacing organizations and a more thorough understanding and implementation of existing programs. APS management will continue to stress these objectives.

2.3 Root Cause Analyses

APS management recognizes the need for thorough understanding and evaluations of root causes of problems. The work of the PMITF is evidence of such recognition. Similarly, the actions taken prior to the CAT inspection to integrate and coordinate the transition from Construction to Operations also reflect the results of root cause evaluations of problems encountered by the interfacing organizations during the startup phase and discovered by internal means. Such actions included the following:

March, 1983 -- Consolidation of Prerequisite and Preoperational Testing under the Unit 2 Startup Manager.

April, 1983 -- Startup Administrative Procedure Development Group established.

-- Startup Information Center established.

June, 1983 -- Consolidation of Prerequisite and Preoperational Testing under the Unit 1 Startup Manager.

Aug., 1983 -- Specific component testing criteria established and implemented, including a re-review of completed safety-related electrical Prerequisite Tests.

Sept., 1983 -- Implementation (after training) of the new Startup Administrative Program approved in August, 1983, that reflected the consolidated startup organization.

Implementation of some of the foregoing actions was in process during the CAT inspection which, unfortunately, may have led to the conclusion that frequent organizational and administrative changes were being made thoughtlessly. On the contrary, these changes, which had been in the developmental phase from April to September, 1983, were made only after thorough root cause evaluations of problems encountered under the previous startup program, where prerequisite and preoperational testing were separated, revealed the need to minimize administrative interfaces and improve organizational communications.

APS will continue to stress root cause problem evaluations, as well as a more detailed and expanded trend analyses. With the stabilized organizational structure now in place, including particularly the Transition Manager, it is expected that analyses of problems and the identification of solutions that address root causes will be expedited.

Section 3.0 Plant Operations
(SALP Report, Section IV.0.1.b.)

Board Recommendations:

> "The licensee should continue preparation of programs and procedures for plant operation. Actions to improve the licensed operator training should be finalized and implemented."

Response:

3.1 Programs and Procedures.

All programs, administrative control procedures and implementing procedures which have been identified as required for fuel load will be prepared, approved and in place at least 60 days prior to fuel load.

3.2 Improvements in the Licensed Operator Training Program.

An assessment of the Training Department was conducted by an outside consultant which has led to improvements in several areas, a systematic approach to training, improvement in the utilization of instructors, and more effective communication, both internal and external, to the Training Department.

An SRO licensed Shift Supervisor from the Operations Department has been promoted to the position of Licensed Training Supervisor. Also, a liaison has been designated by the Operations Department to interface and provide feedback to the Training Department.

For all SRO and RO examinations to date, an outside consultant has administered a screening exam. We are

evaluating this screening process and changes which can improve its effectiveness.

Efforts are continuing to obtain INPO accreditation of the Operator Training Program. The initial self-evaluation is complete and has been reviewed by INPO. The Licensed Operator Training Program should be accredited within 12 months of commercial operation of Unit 1.

Section 4.0 Radiological Controls
(SALP Report, Section IV.0.2)

Board Recommendations:

> "In view of the identified deviations and the delay in the preoperational test program APS should be sensitive to industry experience in the radiological controls areas and take appropriate measures to avoid similar problems."

> "In reference to industry experience, the NRC has noted at other NTOL facilities that several licensees have not completed the preoperational test program for effluent monitoring, waste treatment and TMI action items in a timely fashion (in addition, failure to meet commitments in these areas has been frequently identified.)"

Response:

APS has established realistic schedules for the completion of preoperational testing of effluent monitoring, waste treatment and TMI action items in a timely manner that will meet current regulatory requirements assuming a fuel load date in November, 1984.

APS will continue its concerted efforts to become informed of industry experience and problems encountered over all areas of plant operation, including radiological controls. These efforts include active participation in activities of EPRI and INPO as well as the Atomic Industrial Forum and the Edison Electric Institute. APS is also an active member of the C-E Owners Group, the Steam Generators Owners Group and the Utilities Nuclear Waste Management Group. Additionally, APS maintains a continuous, close liaison at all levels of management with Southern California Edison Company, a Participant with a vested interest in the Palo Verde project.

Section 5.0 Maintenance
(SALP Report, Section IV 0.3.)

Board Recommendations:

> "Continue implementation of maintenance program controls. The Board recommends that the licensee give priority attention to confirming that the recently instituted actions are effective in eliminating previously identified work control problems."

Response:

APS will continue the implementation of maintenance program controls and has been monitoring the effectiveness of recently instituted actions through three recent audits:

- Startup Work Control
- Operations Work Control
- Recovery Program

To date, these audits indicate that the basic controls for performing work are adequately defined and implemented. An additional audit of maintenance activities is scheduled for later this year.

Section 6.0 Fire Protection
(SALP Report, Section IV 0.4)

Board Recommendation:

None

Response:

None

Section 7.0 Emergency Preparedness
(SALP Report, Section IV.0.5)

Board Recommendation:

"The licensee should complete the open items commensurate with the schedule for licensing the plant."

Response:

Only six items remain open in the Emergency Preparedness area. APS management will continue to assert aggressive attention to closing these items on a schedule commensurate with licensing Unit 1 at the earliest possible time.

Section 8.0 Security and Safeguards
(SALP Report, Section IV.0.6)

Board Recommendation:

"The Board recommends diligence in implementing the security and safeguards program for operations."

Response:

APS will comply with the Board recommendations.

Section 9.0 Soils and Foundation
(SALP Report, Section IV C.1.)

Recommended Action:

None

Response:

None

Section 10.0 Containment and Other Safety Related Structures (SALP Report, Section IV.C.2.)

Board Recommendation:

"Licensee management should consider action to improve effectiveness of final QC inspections in this functional area. The management examination should consider identifying and correcting underlying causes, since the need for improvement of final QC inspections is not limited to this one area. The issue is repeated in the functional areas of piping, pipe supports, support systems and electrical. It would appear that the system of Quality checks and balances warrents [sic] assessment. For example, the licensee should consider an examination of the information available for management decisions regarding adequacy of craft work when it is submitted for QC inspection. Currently the licen-

see does not trend QC identified craft rework items. Another example would be assessing the adequacy of the management information provided by QA audits which, in the area of HVAC supports (discussed in C.5 below), failed to identify hardware deficiencies which were later found by the NRC. This is particularly noteworthy since the NRC, in the last SALP cycle had cautioned APS that "the HVAC installation is one of the few activities not given an in-depth surveillance".

Response:

10.1 Improvements in Bechtel QC Inspections and Craft Work

Extensive actions have been taken by Bechtel Construction to improve the quality of work and increase the effectiveness of QC inspections and to improve craft work. The actions include:

A. QC Effectiveness Program

The QC Effectiveness Program requires a Lead QC or QC Supervisor to perform reverification inspections of accepted installations. The inspections are to detect QC errors and determine compliance to design drawings, specifications and procedures. The results of the reverification inspections are routed through the Project Quality Control Engineering (PQCE) office for corrective actions, such as training sessions or reinspections.

B. Craft and Field Engineers Effectiveness Program

This Program implemented a tracking and reporting system to determine the effectiveness of Craft and Field Engineers to perform installations properly and to conduct inspections which identify and correct all problems prior to final QC inspection. All accept-reject information is forwarded to the PQCE office on a daily basis for review and tracking. The results are also reviewed twice

monthly by the Project Construction Manager for applicable corrective action.

C. Quality Talks

This Program requires participation of all construction and subcontract personnel. Approximately 190 "Quality Talk" meetings are held each Tuesday, using a published agenda providing a forum for quality-related matters to be discussed. Old business is also discussed which provides a feedback mechanism on questions or comments raised in previous sessions.

D. Corrective Action Reverification Program (CARV)

The CARV Program was established to reverify the effectiveness of previous corrective actions taken for selected quality problems which (1) were serious enough to have been reported to the NRC; (2) have a history of recurrence; or (3) may be generic.

Results of these actions to date reveal an increased quality product as measured by the Acceptance-Rejection Monitoring Program. Also, awareness of the need for quality has increased as a result of the Quality Talk Program.

10.2 Improving QA Effectiveness

QC effectiveness has not been the only area of concentration. Another area which has received increased attention is in QA effectiveness.

QA Monitoring-Surveillance Programs have undergone review for their adequacy. As a result, some key areas have been targeted as requiring greater emphasis and management attention.

A. The Bechtel Audit Program has now been geared to place increased emphasis on physical or hardware verification activities.

B. The Bechtel Surveillance Programs will review physical work activities which have been completed as well as the programmatic controls utilized.

10.3 Improvements in APS QA/QC Programs

Corrective Action has not been limited to Construction QA/QC activities. APS has performed an evaluation of its QA/QC activities and has taken action to prevent deficiences from occurring in its areas of responsibilities as outlined below.

A. APS has established a Quality Control Effectiveness Program similar to that described in Item A of Section 10.1 above. This Program is geared to APS QC personnel.

B. Training of APS QC personnel is being developed and coordinated through the Corporate QA Training Section. The Corporate Training Section will review and monitor certification and qualification.

C. Personnnel associated with the Project have been and are required to view a video tape prepared by APS regarding the quality of work required and expected on the Project.

D. APS QA has focused a large effort toward rectifying the need for overall improvement in the APS Corrective Action System in the areas of timeliness and effectiveness. In addition, greater management attention has been directed toward identifying the root cause of a problem and the effectiveness of a resolution. The APS Corrective Action Procedure has been completely rewritten to provide comprehensive action on the part of the responsible organizations, including root cause analysis, when responding to a cited deficiency. Additionally, procedural controls have been established which will escalate Corrective Action Reports to higher levels of management when responses are untimely or inadequate.

E. A weekly program to provide and exchange information to and among all QA/QC personnel is being planned and will be implemented in late July, 1984.

10.4 Control of Subcontractor Work

In the area of control of subcontractor work, APS management was aware of the problem as a result of physical verification audits performed in late 1983. These audits included the Fire Protection System and the Security System. As a result, APS QA identified and reported a trend to APS and Bechtel Project Management concerning ineffective subcontractor control. Subcontractor control has been discussed at recent monthly Bechtel/APS Management Quality Meetings and Executive Review Meetings.

As a result of these actions, a plan has been developed to accomplish two objectives.

1. Improve effectiveness of subcontractor work and QC inspections.

2. Evaluate each subcontractor performing safety-related or important-to-safety work to see if additional reviews, inspections or controls are required.

To accomplish the first objective, several programs have been strengthened or developed. Some examples include:

A. Bechtel Construction QC surveillance of "Q" subcontract documentation and work activities are conducted on a daily basis. When a subcontractor is actively involved in "Q" work, a QCE will be assigned to survey the activities.

B. The Field Subcontracts organization has been instructed to direct the subcontractors to

submit and document, via the Supplier Design Deviation Request (SDDR) process, all requests for deviations from specifications.

C. A process has been instituted to review all subcontractor documentation for completeness and compliance to the subcontract for all work performed.

D. More emphasis has been placed by QA on surveillance of hardware installations.

E. All new construction subcontract personnel are required to attend a Quality Orientation Program.

To accomplish the second objective, the method and frequency of monitoring the work of each quality related subcontractor has been reviewed and evaluated to determine if sufficient evidence is available to gain confidence that subcontractor activities were performed correctly.

The results of these actions and of past audits and surveillance findings, indicate that, with the exception of the heating, ventilation and air conditioning (HVAC) and fire protection subcontractors, there is no evidence that reinspection activities need to be initiated. Based on recent Deficiency Evaluation Reports (DER's), Corrective Action Requests (CAR's) and audit findings, increased surveillance and monitoring activities of the HVAC and fire protection subcontracted work have been instituted and will be continued. In addition, as stated previously, increased focus by QA on hardware installation activities has been instituted.

10.5 Conclusions

In summary, the corrective actions that have been described have resulted in an increased awareness of the importance of quality, an improved effectiveness of QC inspections and improved control of subcontract work. QA and management are now able to more readily identify root causes and take timely action.

With respect to previously accomplished work, it is not impossible that minor deficiencies may still be found. Nevertheless, in the light of the findings to date from extensive inspections and reinspections, testing and retesting, evaluations and other corrective actions that have been taken, APS is confident that Palo Verde has been constructed to a high level of quality and safety and that any deficiencies that have not been uncovered are indeed minor and will have no effect on the safety of Palo Verde.

Section 11.0 Piping Systems and Supports (SALP Report, Section IV.C.3)

Board Recommendation:

> "Licensee management should ensure that corrective action taken in response to identified problems is comprehensive, timely and effective. While this appears to have been done for the CAT findings, performance is not consistant [sic] in this functional area. Licensee actions regarding QC effectiveness were included in the Board recommendation for area C.2."

Response:

See Section 10.0 of this Response.

Section 12.0 Safety Related Components
(SALP Report, Section IV.C.4)

Board Recommendation:

> "Greater licensee attention should be given to the APS/CE interface including offsite activities to identify the underlying problems that have led to the reportable deficiencies. Aggressive management action should be taken to ensure a proper and stringent adherence to QC qualification requirements."

Response:

Increased emphasis has been and will continue to be placed on the APS/CE interface. Combustion Engineering is an integral part of many meetings and review groups, such as the weekly Project Staff Meeting and the Test Working Group. Additionally, an APS/CE Management QA Meeting has been established since May, 1984 to discuss quality problems. Further, the interface within Combustion Engineering between on-site and off-site is becoming more formalized. During an upcoming audit of Combustion Engineering's Home Office, increased emphasis will be placed on:

1. Deficiency Evaluation Reports (DER's) initiated as a result of equipment failure to determine the underlying problems of the design failure.

2. Nonconformances initiated by Combustion Engineering with "Accept-As-Is" and "Repair" dispositions to assure the engineering justification is substantiated by backup data.

3. Corrective Action taken as a result of identified deficiencies assures that the cause of the condition is determined and action taken will preclude repetition.

Additionally, action has been initiated to review and evaluate QC qualification. If additional action, not already described to the NRC, is required, such action will be taken promptly following identification of a deficiency.

Section 13.0 Support Systems
(SALP Report, Section IV.C.5)

Board Recommendation:

> "The licensee should increase management attention to subcontracted work and ensure that identified issues such as nonconformance reporting and engineering changes are properly performed."
>
> "The licensee actions regarding QC final inspection effectiveness are discussed in Section C.2 of this SALP report."

Response:

See Section 10.0 of this Response

Section 14.0 Electrical Power Supply and Distribution
(SALP Report, Section IV.C.6)

Board Recommendation:

> "The licensee should take aggressive action to ensure QA precepts are understood and practiced by craft, supervision and the QC organization."
>
> "The actions regarding QC final inspection adequacy are addressed in Section C.2 of this report."

Response:

See Section 10.0 of this Response.

Section 15.0 Instrumentation and Controls
(SALP Report, Section IV.C.7)

Board Recommendation:

> "The licensee should maintain an aggressive program of overview of the vendor products and onsite work."

Response:

APS will continue its aggressive program of overview of vendor products and onsite work.

Section 16.0 Licensing Activities
(SALP Report IV.C.8)

Board Recommendation:

> "The licensee should apply more management attention to the remaining licensing issues so that responses are timely and sound."

Responses:

APS management will continue its active and aggressive attention to the remaining licensing issues so that responses are timely and sound.

With respect to backfitting of previously approved designs to meet new or changed regulatory requirements, the right to challenge and appeal is clearly provided by NRC regulations and practice. An occasional judicious exercise of such rights should not be cited as demonstration of the lack of aggressive response to NRC initiatives.