ENCLOSURE (2)

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

SYSTEMATIC ASSESSMENT OF LICENSEE PERFORMANCE

PENNSYLVANIA POWER & LIGHT COMPANY

SUSQUEHANNA STEAM ELECTRIC STATION

June 1, 1982

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I. INTRODUCTION

a. Purpose and Overview

The Systematic Assessment of Licensee Performance (SALP) is an NRC staff effort to collect observations annually to evaluate licensee facilities in order to improve the NRC Regulatory Program and licensee performance.

This assessment period is March 1, 1981 through February 28, 1982, with additional observations through May 1982.

The prior SALP assessment period was January 1, 1980 - December 31, 1980. Significant findings from that assessment are included in the applicable performance analysis functional areas (Section IV).

Evaluation criteria for this assessment are discussed in Section III below. Each criterion was applied using the "Attributes for Assessment of Licensee Performance" contained in NRC Manual Chapter 0516.

b. SALP Review Board

R. Starostecki, Director, Division of Project and Resident Programs (DPRP)
T. Martin, Director, Division of Engineering and Technical Programs (DETP)
G. Smith, Director, Division of Emergency Preparedness and Operational Support (DEPOS)
R. Keimig, Chief, Reactor Projects Branch No. 2, DPRP
E. McCabe, Chief, Reactor Projects Section 2B, DPRP
J. McCann, Resident Inspector
L. Narrow, Project Inspector
R. Perch, Licensing Project Manager, Licensing Branch No. 2, NRR
G. Rhoads, Senior Resident Inspector @ Susquehanna Unit 1

c. Background

(1) Licensee Activities

Licensee effort has been concentrated on Unit 1. Intensive effort is underway to complete Unit 1 construction and preoperational testing by July 15, 1982 (scheduled fuel load date). Of 141 systems requiring preoperational testing, 120 tests had been conducted, and 106 test results were approved as of May 22, 1982. Unit 1 construction was reported 99% complete as of April 1, 1982.

Construction activity on Unit 2 continues at a reduced level because of Unit 1 priority. Unit 2 is about 66% complete. The 3,600 person construction force is divided about 65% on Unit 1 and 35% on Unit 2. Unit 2 system walkdowns are to begin shortly, with the first system turnovers to occur in July 1982.

During the assessment period, the following major licensing events occurred:

April 1981	-	Safety Evaluation Report (SER) Issued.
June 1981	-	Supplement 1 to SER Issued.
August 1981	-	ACRS Recommended Approval of Operating License.
September 1981	-	Supplement 2 to SER Issued.
October 1981	-	ASLB Hearing Conducted.
October 1981	-	Received NRC Materials License; Began Receiving Fuel.
February 1982	-	All fuel onsite for Unit 1 initial fuel load.
April 1982	-	ASLB Recommended Operating License Be Granted. (Outside Assessment Period)

(2) Inspection Activities

(a) Construction

A region-based Project Inspector was assigned throughout this assessment period and performed five routine inspections, mostly of open items, Bulletins and Circulars, and Construction Deficiency Reports. Two of the project inspector reports contained region-based electrical Specialist inputs. Four region-based Specialist inspections were performed. Three covered instrumentation and control and one was a Construction Assessment Team (CAT) inspection (in March 1981). The March 23 - April 4, 1982 inspection (after the assessment period) covered Quality Assurance, Design Controls, Project Management - Preoperational Test Program, Construction Controls, and Maintenance and Surveillance.

In March 1982 the resident inspector was assigned project responsibility for the Unit 1 and Unit 2 construction program. But inspection effort, like licensee effort, has been concentrated on Unit 1.

(b) Preoperational/Startup Activities

A resident inspector was assigned throughout the entire period. A second resident inspector arrived in October to fill the vacancy caused by promotion of the previous Senior Resident Inspector. The residents performed nine routine inspections and participated in the Construction Assessment Team Inspection. Six region-based specialist inspections were made of training, security, preoperational testing, plant procedures, and startup testing.

Following the assessment period, a Health Physics Appraisal was held in March 1982, and an Emergency Plans Appraisal was held in April 1982. An NRC team witnessed a licensee emergency drill conducted on March 17-18, 1982. Local, state, and federal agencies participated.

II. SUMMARY OF RESULTS

SUSQUEHANNA STEAM ELECTRIC STATION

Functional Areas	Category 1	Category 2	Category 3
1. Readiness for Operation		X	
2. Maintenance		X	
3. Preoperational Testing		X	
4. Emergency Preparedness		X	
5. Security & Safeguards	X		
6. Electrical Power Supply & Dist.		X	
7. Instrument & Control System		X	
8. Quality Assurance		X	
9. Licensing Activities		X	

III. CRITERIA

The following criteria were applied to each area.

1. Management involvement in assuring quality.
2. Approach to resolution of technical issues from a safety standpoint.
3. Responsiveness to NRC initiatives.
4. Enforcement history.
5. Reporting and analysis of reportable events.
6. Staffing (including management).
7. Training effectiveness and qualification.

To provide consistent evaluation of licensee performance, attributes describing the characteristics applicable to Category 1, 2, and 3 performance were applied as discussed in NRC Manual Chapter 0516, Part II and Table 1.

The SALP Board conclusions were categorized as follows.

Category 1 Reduced NRC attention may be appropriate. Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used such that a high level of performance with respect to operational safety and construction is being achieved.

Category 2 NRC attention should be maintained at normal levels. Licensee management attention and involvement are evident and are concerned with nuclear safety; licensee resources are adequate and are reasonably effective such that satisfactory performance with respect to operational safety and construction is being achieved.

Category 3 Both NRC and licensee attention should be increased. Licensee managment attention or involvement is acceptable and considers nuclear safety, but weaknesses are evident; licensee resources appeared strained or not effectively used such that minimally satisfactory performance with respect to operational safety and construction is being achieved.

IV. PERFORMANCE ANALYSIS

1. Readiness for Operation (16%)

1.1 Inspection Coverage

The resident inspectors periodically reviewed this area during the assessment period. One region-based specialist inspection of Staff Training was performed and one region-based specialist performed a preliminary inspection of plant procedures. A team inspection to review plant procedures and a Health Physics (HP) appraisal team inspection were held after the assessment period.

1.2 Management Staff

Operations staffing was accepted by joint NRR/IE inspection before the assessment period. Management has been and continues to be considered dynamic and nuclear safety oriented, with considerable nuclear experience.

1.3 Operating Staff

The initial examination of licensed operators was a trial examination under new NRR criteria, and there was a large failure rate (5 of 10 SRO and 5 of 7 RO failures). The individuals who failed were re-examined late in May 1982. NRR did not class the initial failures as requiring a specific time delay before re-examination because the examination was a new one. A second group of candidates performed better (6 of 8 RO's and 12 of 17 SRO's passed the written examination). This examination was taken before receiving results of the first one. The first two groups of candidates have also been given the simulator and oral portions of the examination. The licensee has been told that thirteen SRO's (including four simulator instructors) and three RO's have successfully passed all phases of the examination process. Operator training adequacy may be a problem, but there is insufficient data to draw a definitive conclusion. Resident inspection has indicated that plant operators are knowledgeable of plant and system operations.

Non-licensed training appears adequate but the program has not been formally promulgated and approved, and a definitive assessment cannot yet be made. The plant staff has not completed operational training. Although the licensee believes that most training needed has been done, the lack of approval and promulgation of a definitive program does not permit verification. There appear to be about 10-14 health physics staff shortages and 2-3 chemistry staff shortages.

1.4 Committee Activities

PORC has been reviewing operating procedures for about nine months. Observation of PORC activities identified no problems. After the assessment period, the licensee was cited for approving a procedure before PORC review. The licensee is trying to change the technical specifications to decrease the number of

procedures required to be reviewed by PORC because of excessive time demand. The offsite review committee was evaluated as being satisfactory for the activities involved (after the assessment period).

1.5 Operations-Related Activities

The plant staff performs preoperational testing under ISG direction, thereby gaining operational experience. Two plant staff Violations were identified: one for using unapproved procedures and one for failing to properly change an approved procedure. An inspector concern dealt with flooding of the circulation water building to about 4' due to improper valve lineups on non-safety-related water systems. This occurred because a red tag was removed without the valve involved being repositioned as required. The licensee took steps to assure that control room operators are more aware of system status, including changing the logs for the control room and the system lineup checklists/status boards, and requiring notation of valve positions on completed tagout sheets. Though the Violations and concerns identified are not themselves acceptable, the overall frequency and severity of the problems being identified is not considered a significant problem.

1.6 Operations Procedures

Facility procedures readiness for operations has been an ongoing concern. The March 22 - April 4, 1982 QA/Procedures team inspection (after the assessment period) verified that many procedures needed for plant operations still were not approved. The licensee is maintaining a status of procedures. About 90% of the operating procedures are approved (5/10/82). Approved operating procedures have generally been found acceptable, and those procedures are being validated by walk-through and by simulator operations. That is not a requirement or a commitment, and may not be accomplished on all procedures. The licensee plans a July 15, 1982 fuel load date, indicating that operating procedure approval is lagging the need. The interface between corporate engineering and the plant technical group needs upgrading to support post-construction evolutions (with no A/E presence). Effective communication has not been demonstrated in this area.

1.7 Initial Fuel Receipt

Initial fuel receipt, inspection, and storage was reviewed by the resident inspectors between October and January. No Violations or major discrepancies were identified. The licensee has received all fuel needed for initial fuel load.

1.8 Fire Protection and Housekeeping

The last region-based specialist inspection was prior to the assessment period. Fire protection activities were reviewed by the resident inspectors. Extensive modifications have been performed to correct discrepancies found by an NRR Fire Review Team inspection before the assessment period. The modifications have included a new fire control panel in the control room, additional carbon

dioxide, more sprinklers, and additional fire protection wrapping and insulation of cable trays and cables. Because there was no detailed inspection of this area, no assessment of the associated licensee performance is included. But, as noted in Area 9, Licensing Activities, there are outstanding fire protection issues to be resolved with NRR.

Housekeeping was reviewed periodically during the assessment period by residents and by region-based specialists. One Violation was identified (after the assessment period) for poor housekeeping in the diesel generator bays (spilled oil). A meeting with plant personnel was held to discuss cleanliness. The licensee is developing a program to differentiate plant areas by the amount of construction work continuing in the area. Housekeeping and equipment preservation measures are being established according to the type of construction work in progress. The licensee is putting a great amount of manpower into cleaning up the plant, especially in the drywell and reactor building. Continued licensee management attention is needed.

1.9 Construction Completion

Construction is over 99% complete. The licensee's May 1, 1982 punch list contained about 3500 items, down about 300 from the previous month. As of May 10, 1982 preoperational testing was reportedly about 95% complete and proceeding at close to 3% per month. Of the 135 preoperational tests approved, 120 were completed and 106 accepted by May 22, 1982, and the recent acceptance rate has been about 30 tests per month. The cold functional test is not yet done. The containment leak rate test was satisfactorily finished on May 23, 1982. As of May 26, 1982, Region I had the following numbers of open items identified as needing resolution before fuel load: 13 Violations, 24 TMI items, 32 CDR's, 17 IEB's/IEC's, and 69 other items. There is strong licensee management pressure to be ready for a July 15, 1982 fuel load date, and concurrent NRC emphasis upon assuring that quality of work does not suffer as a result. Construction Deficiency Report closeouts sometimes are presented to the NRC prematurely, but quality generally seems to have first priority. The extremely ambitious licensee schedule necessitates particular attention to this area.

Conclusion: Category 2

Board Recommendation: Inspect non-licensed training, procedures, health physics and chemistry staffing, and fire protection modification work. Be particularly alert for potential adverse affects on quality as a consequence of the ambitious construction completion and preoperational testing schedule.

2. Maintenance (5%)

Preventive maintenance was addressed during the March 1981 CAT Team inspection and by two region-based and three resident inspections. No Violations were identified during this assessment period (one Violation was identified previously). The CAT Team also found that a lack of good interface control between the contractor and licensee with respect to turning over responsibilities for preventive maintenance had not been corrected (identified during previous SALP).

The licensee has made programmatic changes to assure turned-over systems are put into an interim preventive maintenance (PM) program. This program applies from system turnover to the startup group until the Operations Preventive Maintenance Program becomes effective. Changes made to the program include placing instrumentation in the plant staff's PM program when a system is turned over to the ISG. Instrumentation had not been previously placed in plant staff's PM program until initial calibration was completed. Recent inspection has indicated that the interim PM program is effective.

Training of the plant maintenance staff and the Electrical and Structural Construction Group (E&S) made up of PP&L employees is ongoing. As discussed in Functional Area 1, the training program is not yet formally approved. The E&S group is composed of maintenance personnel used to augment the plant maintenance staff, and will be used during maintenance periods (ex. refueling outages) after the plant is in operation. This group numbers around 2000 and is also used for outage work at fossil fuel plants. About 100 members of the group are at the Susquehanna site. E&S training was considered a strength by a region-based electrical specialist.

The licensee has improved in Preventive Maintenance and appears to have enough maintenance personnel to do the work.

Conclusion: Category 2

Board Recommendation: Continue routine inspection of maintenance area.

3. Preoperational Testing/Startup Testing (32%)

Analysis

3.1 Inspection Coverage

During the assessment period, there were continual resident and two region-based specialist inspections. Three other region-based specialists made preoperational testing inputs to resident inspection reports. The CAT inspection also reviewed Project Management Control of the preoperational program, including review of the Test Review Board operations.

3.2 Preoperational Test Adequacy

During the previous assessment period, concerns had been raised about assuring that licensee commitments and regulatory requirements were being incorporated into preoperational tests. The licensee then reorganized the membership of the Test Review Board (TRB) and required the plant technical staff to review preoperational tests. Procedures reviewed after that reorganization were found to be better written. However, during the last three months of the assessment period, a Violation was identified for not incorporating commitments into preoperational tests, and a Violation was identified for a preoperational test not verifying acceptance criteria as required. After the assessment period, another Violation (not yet replied to) was identified for failure to incorporate commitments into the Cold Functional Test. The licensee committed to doing a review of their preoperational test program (described in Chapter 14 of the FSAR) to assure that the test program has met commitments. PP&L also has hired an outside consultant to review the preoperational program to determine if testing has verified all requirements and commitments. Preoperational test adequacy remains an NRC concern.

3.3 Preoperational Test Implementation

Three Violations have been found in this area: 1) failure to follow procedures for processing startup field reports, 2) failure to follow procedures regarding tagging and temporary modifications (jumpers), and 3) failure to update instrument data sheets for safety-related instruments supplied by General Electric. The licensee took corrective action. After the assessment period, a Violation was found for an unauthorized gain adjustment of an APRM while conducting preoperational testing. These Violations are not considered to constitute a serious program breakdown. Preoperational tests witnessed have been run in accordance with procedures. Sufficient licensee personnel have been present to do the tests, and discrepancies noted have been properly documented as test exceptions. The operating staff and the Startup Test Directors have been knowledgeable in system operations. Management has been active in the preoperational test implementation, took immediate corrective action on NRC identified discrepancies, and required system retesting if major modification work was performed after initial testing. Completion of preoperational testing is discussed in Area 1, Readiness for Operation.

3.4 Preoperational Test Results

Nineteen completed preoperational tests were reviewed during the assessment period. That review indicated that the licensee is documenting, reviewing, and approving preoperational test results in accordance with their procedures. Test exceptions are reviewed for proper resolution and review by the Test Review Board has been properly documented. Licensee management is actively involved in the review and approval of test results.

3.5 Startup Testing Program

The Startup Testing Program was inspected twice during the assessment period by region-based specialists. No Violations were found. Inspection included review of procedures for initial criticality, fuel loading, and power ascension tests. The tests have been found technically adequate, with minor discrepancies. The licensee made corrections based on inspector comments and appears to have an adequate startup program.

Conclusion: Category 2

Board Recommendation: Review the licensee's and consultant's audit of the preoperational test program. Continue prescribed preoperational test witnessing and test results review.

4. Emergency Preparedness (1%)

Analysis

This is the first SALP of emergency preparedness. Four resident inspections were performed in emergency training (onsite and offsite) and emergency drills. No Violations were identified. The licensee showed quick responsiveness to NRC concerns about one training session witnessed by requiring participants to reattend the lecture.

A combined NRC/FEMA Emergency Drill was conducted outside the assessment period on March 17-18, 1982. The inspection team concluded that the exercise demonstrated that PP&L could implement the emergency plan to adequately protect the health and safety of the public.

An Emergency Team Appraisal was conducted from April 13 - April 22, 1982 (outside the assessment period). A May 24, 1982 Region I Confirmatory Action Letter stipulated the following before fuel load: increasing seniority of and completing training for alternate EOF Support Managers; emergency preparedness implementing procedures completion, approval, and issue; training the emergency organization in the implementing procedures; procurement and distribution of "pagers" for staff augmentation, and demonstrating the ability to augment the onsite staff in 30-60 minutes; clearly documenting the Emergency Director's responsibility for making initial offsite protective action recommendations; developing emergency action levels based on actual and projected status and potential releases; completing and proving the post-accident sampling system; readying emergency response equipment and facilities; and proving the prompt notification system.

The prompt public notification system is scheduled for functional test on June 4, 1982.

Conclusion: Category 2

Board Recommendation: Continue prescribed inspections.

5. Security and Safeguards (3%)

Analysis

This is the first SALP of physical security. Three preoperational safeguards inspections and a licensing review of the physical security plan at the site were accomplished during the assessment period. The purposes of the inspections were to determine if the licensee was affording protection of SNM of low strategic significance in accordance with the physical security plan, to assess the physical security plan and implementing procedures, to review the progress made towards meeting physical security commitments, including separation measures to permit Unit 1 operation with Unit 2 under construction and potential problems with installed systems. The physical security plan has yet to be approved; consequently, there is no enforcement history. The training and qualification plan is well defined; a highly competent staff and excellent training facilities were noted. The licensee expects the security program to be fully implemented by June 1, 1982. A final preoperational physical security inspection is planned in June 1982.

Conclusion: Category 1

Board Recommendation: Continue prescribed inspections.

6. Electrical Power Supply and Distribution (4%)

Two inspections were conducted by a region-based specialist. Two Violations were identified: failure to maintain electrical tray separation requirements; and protection of electrical components, terminations, and connections during modification of electrical panels. The Violation dealing with protecting the electrical panel occurred during major modification work by Bechtel electricians and PP&L staff electrical maintenance personnel. Controls over the work were not sufficient to prevent degradation of the panels.

When the problem was identified, the licensee was slow to take corrective action initially, but then took decisive steps to correct the problem. Those actions included stopping work in the control structure relay rooms until panels were properly restored, and expanding the corrective actions to other areas of the plant. Licensee management has imposed substantive controls on electrical equipment maintenance during modification work.

The licensee identified nine Construction Deficiency reports in this area, and recently (April 1982) identified a potential electrical distribution deficiency. That deficiency involves the voltage available to motors and AC powered valve operators.

Startup transformers were replaced, prior to the assessment period, with transformers with automatic tap adjustments. Transformers reducing voltages to 4160 volts and to 480 volts do not have automatic tap adjustments and there is an undervoltage problem during certain plant configurations. In a May 24, 1982 licensee/NRR/Region I meeting, the licensee presented an interim plan of installing a LOCA relay to drop out all Unit 2 loads and initiate startup transformer output voltage increase. The NRC has asked for additional information on the characteristics and qualifications of the circuitry involved.

The relay coordination study has not been finalized, and is needed for NRC review.

Conclusion: Category 2

Board Recommendation: Continue prescribed coverage, emphasizing close followup of problem areas.

7. Instrumentation and Controls (5%)

The CAT inspection and three region-based specialist inspections were conducted during the assessment period.

Four Violations and one Deviation were identified: the Hydrogen Analyzer atmosphere sample return line did not conform to vendor installation instructions; Certified Performance Data not available for the Reactor Coolant Radiation Leak Detection System to establish minimum instrument capability; installation of installed damper control assemblies did not conform to vendor certified drawings; nonconforming solenoid valves had not been correctly identified but had been installed in safety-related systems; and a deviation existed in the seismic installation of electrical panels. The CAT team also stated that the two Violations and the deviation in the instrumentation area showed a weakness in the licensee program. Information provided after the CAT inspection lowered the safety import of these items: the hydrogen analyzer installation was certified adequate by the manufacturer; a primary leak detection rate of three times normal was proposed by the licensee and accepted by NRR; and the licensee submitted information to support his position that the seismic installation of electrical panels was adequate.

Every inspection of the instrumentation and controls area has identified problems. Several Violations and CDR's have been associated with electrical and instrument separation. The licensee identified seven I&C CDR's. CDR's in the I&C and electrical areas comprise 50% of the reported deficiencies. I&C also had numerous CDR's reported in prior periods. However, the licensee is meticulous about submitting CDR's. Licensee management involvement is evinced in CDR processing. And, while the number of problems has been significant, it is not considered atypical.

Conclusion: Category 2

Board Recommendation: Region-based specialist inspection to evaluate CDR's and prior Violations, complete I&C construction modules, and review separation of electrical and instrument cabling.

8. Quality Assurance (QA) (33%)

8.1 Inspection Coverage

The Construction Assessment Team (CAT) Inspection and routine resident inspections reviewed Construction and Preoperational QA. A team inspection (after the assessment period) reviewed Operations/Preoperations QA.

8.2 Construction QA

Four Violations and three program weaknesses were identified by the CAT. The Violations included improper auditor certification (isolated instance), issue of QA procedures without proper review, incorrect use of QA Supplemental Procedures, and no review to assure weld accessibility for ISI. Weaknesses involved confusion between the relationship of the Susquehanna QA Plan and the QA Manual, lack of QA evaluation of Bechtel's turnover process, and outdated procedure references in the QA Manual. Two Violations and one weakness are still open, although two of these are reportedly ready for closeout. ISI accessibility is still unresolved: the licensee has submitted a list of inaccessible welds to NRR and requested ISI relief. Final system walkdowns may identify more such welds. The licensee has yet to show the ability to perform ISI on the Recirculation Riser double weld configuration, but has mocked up a potentially acceptable means to the satisfaction of RI specialists. After the last SALP, the licensee formed a PP&L Construction Surveillance Group to monitor in-process Bechtel work. The group is managed by PP&L and consists mainly of consultants. Their input appears beneficial.

8.3 Preoperational QA

The March 1981 CAT inspection found one Violation and one weakness: no functional procedure was approved for trending nonconformances; and lack of QA evaluation of Bechtel's turnover process. Both of those issues have been resolved.

Licensee Quality Control inspectors were observed by NRC inspectors during preoperational testing and maintenance and were knowledgeable and safety-oriented. The QC organization reports to supervisors in the QA organization, not to Plant Supervision. This chain provides independence from the operations and appears to be effective. Preoperational QA coverage was questioned during the March 22 - April 4, 1982 Procedures/QA team inspection (after the assessment period) because of insufficient audits, but no major QC discrepancies were found. Afterwards, the licensee put a full time QA auditor in the ISG to monitor preoperational activities.

After the last SALP, the licensee established a computerized open item tracking system for NRC items, including Construction Deficiency Reports (CDR's), Bulletins and Circulars, and other Inspection Report Items. The tracking system has been an effective licensee tool for bulletins and circulars, and indicates when items are ready for closeout inspection. For CDR's, however, the tracking controls do not appear adequate. Recent inspections (outside the assessment period) have shown discrepancies between what the licensee considers ready for closeout inspection and what inspectors feel is needed for close out. The CDR tracking mechanism indicates a CDR is ready for close-out after the final disposition letter has been sent to the NRC. The system has not been effective in providing the status of CDR resolution for inspection by NRC.

The licensee management organization met with NRC management and discussed their QA plan in March 1982. At that meeting, the licensee committed to having a third party audit of part of the Feedwater system as an added assurance that the plant had been built in accordance with requirements, and that documentation existed to support that conclusion. The report is presently scheduled for issue in June. Preliminary results indicate only minor discrepancies.

The QA/Procedures team inspectors, despite the numerous violations and weaknesses noted above, felt that the QA program was effective and performing well.

FSAR correctness is a continuing concern, with discrepancies noted in core spray initiation logic, CRD instrument volume description, recirculation speed limiter control description, RHR drawings, and fire protection references. The licensee is tracking these items and has corrected several others. Construction deficiency closeout is a major obstacle to license issue, as is correcting other significant licensee identified discrepancies. Critical issues include PGCC/ACR electrical separation, and electrical and power control equipment.

8.4 Operations QA

The NRC Operations QA inspection after the evaluation period indicated concerns about insufficient operations QA manning and about the operational QA program being ready to start on April 1, 1982. The Nuclear QA Manager committed to increase the Operations QA staff size by fuel load and to have the noted deficiences corrected by May 1982. Operations QA did begin on April 1, 1982 without all procedures in place, but no adverse effects have yet been detected. Definitive assessment at this time, however, would be premature.

Conclusion: Category 2

Board Recommendation: Continue present inspection program, emphasizing the adequacy and implementation of operations QA.

9. Licensing Activities

Analysis

During this evaluation period, the following significant licensing actions were accomplished: 1) issue of the Susquehanna Safety Evaluation Report with two supplements, 2) issue of the Susquehanna Final Environmental Statement, 3) completion of the Advisory Committee on Reactor Safeguards review, and 4) completion of public hearings before the Atomic Safety and Licensing Board.

The licensee displayed a positive and supportive attitude toward resolution of potential issues. Throughout the licensing review process, the licensee made a concerted effort to be responsive to NRC review questions. Most responses were delivered within the time frame specified. The licensee has also been an active participant in the BWR Owners Group and has made significant contributions in the Procedures Subcommittee in that owners group.

The utility licensing staff members have a good working knowledge of applicable regulations, guides, standards and generic issues. During meetings with the NRC, the licensee has provided the appropriate technical persons to make the meetings productive. The licensee has a clear understanding of issues and provides a technically sound approach in almost all cases.

The principle outstanding OL issues include resolution of vital bus undervoltage, the gas line running near the site, environmental qualification of electrical equipment, excessive loads on the diesel generator, ADS logic modification, the remote shutdown panel, and battery room area fire protection.

In summary, the licensee is characterized as knowledgeable, cooperative, technically competent, and responsive in the licensing area.

Conclusion

Category 2.

Board Recommendations

None.

V. SUPPORTING DATA AND SUMMARIES

1. Construction Deficiency Reports

Tabular Listing

Type of Events:

A.	Personnel Error	5
B.	Design/Manufacturing/Construction/Installation	26
C.	External Cause	1
D.	Defective Procedure	4
E.	Component Failure	0
F.	Other	2

Causal Analysis

Only one group of Construction Deficiencies appeared to have a common cause. CDR Nos. 81-00-04, 81-00-16, and 81-00-21 all resulted from welder/welding QC inspection errors due to apparent lack of knowledge or experience.

2. Investigation Activities

Two special NRC investigations were conducted during the assessment period. One dealt with an allegation that radiographic records of unidentified pipe weld joints were being falsified by representing multiple radiographs of one pipe weld joint as radiographs of other weld joints which were difficult to radiograph due to location.

The other investigation dealt with allegations raised by members of the Construction Surveillance Group that reports of nonconforming conditions by the groups were being materially changed or suppressed by their supervisor.

Neither investigation substantiated the allegations.

An allegation was received on February 10, 1982, from an individual representing an environmental group, stating that bolts for the reactor vessel head had been bent and a concrete pipe carrying water from the reactor to the cooling tower had been improperly repaired.

The resident inspectors inspected the reactor vessel heads for Units 1 and 2 and observed the Unit 1 head being installed on February 11, 1982. There is no safety-related concrete pipe going to the cooling tower. The alleger was contacted on February 11, 1982 and on February 23, 1982 for additional information to clarify his concerns. No additional information has been received. No substantiation of these allegations has been found.

3. Escalated Enforcement Action

a. Civil Penalties - None.

b. Orders - None.

c. Immediate Action Letters/Confirmatory Action Letters - None.

4. Management Conferences Held During the Assessment Period

SALP Cycle 1 Management Meeting at the Susquehanna Steam Electric Station on February 26, 1981 (outside assessment period).

Management meeting at the Region 1 office on November 20, 1981, requested by the licensee, to discuss the completion of construction and preparations for operations.

Management meeting at the Region 1 office on April 21, 1982 (outside assessment period), requested by the licensee, to discuss the resolution and closeout of remaining inspection items.

TABLE I

CONSTRUCTION DEFICIENCY REPORTS

CDR Number	Cause Code	Summary Description
*81-00-01	B	Excessive wear of valve hinge prevents Pacific Valve Co. check valves from closing properly.
81-00-02	B	Over-stressing of diesel generator exhaust line. (resolved)
81-00-03	B	Defective bobbins in G.E. HFA relays.
81-00-04	A	Nonconformance to specification requirements for welding dissimilar metals. (resolved)
81-00-05	D	Potential mislocation of fuel support pieces. (resolved)
81-00-06	B	Bailey meters not seismically qualified.
81-00-07	C	Deterioration of ASCO solenoids due to feedback of oil mist into valve interiors. (resolved)
*81-00-08	B	ITE Gould 480V circuit breaker - racking may cut or damage wires in back of cavity.
81-00-09	B	Failure of disc in Pacific Valve Co. check valve.
81-00-10	B	Lack of separation in PGCC cables.
*81-00-11	X	Control room habitability.
81-00-02	B	Field purchase of miscellaneous metal from unapproved supplier.
81-00-13	B	Oversize lugs on internal wiring of ITE circuit breakers.
81-00-14	B	Undersized fillet welds on downcomer bracing fabricated by Industrial Engineering Works.
81-00-15	D	Improper HVAC isolation damper orientations.
81-00-16	A	Unacceptable hanger welds.
81-00-17	D	Diesel generator Lube Oil Pump failure.
*81-00-18	A	Improper wiring termination.

* withdrawn

Table I (Cont'd)

CDR Number	Cause Code	Summary Description
*81-00-19	A	Use of incorrect check valves on instrument air lines.
81-00-20	B	Cracked Limitorque limit switch rotors. (resolved)
81-00-21	A	Deficient socket welds on instrument gas lines. (resolved)
*81-00-22	X	Inadequate design of Emergency Service Water system.
81-00-23	B	Stripped Agastat GP lug fastener threads
81-00-24	D	Potential shorting of electrical equipment. (resolved)
81-00-25	B	Replace Limitorque SMB-4 operator motor-to-shaft keys.
81-00-26	B	Defective NEMA-2 starters supplied by Cutler-Hammer.
81-00-27	B	Crosby Safety/Relief Valve solenoids will not actuate with worst case supply voltage and post LOCA temperatures (340°F).
81-00-28	B	AIW cable failed environmental qualification. (resolved)
81-00-29	B	Relay scheme lets lockout preclude swing bus M-G set restart.
81-00-30	B	Design change to closing circuits of ECCS breakers requires manual reset of trip after loss of off-site power.
81-00-31	B	Undersize Main Steam Relief Valve flanges.
81-00-32	B	Agastat GP relays fail to close when deenergized.
81-00-33	B	Cavitation caused by RHR valve throttling.
81-00-34	B	Deficient termination of MAC-ADAPT compression adapters.
81-00-35	B	Oversize hole in head of Emergency Diesel. (resolved)
81-00-36	B	Failure of LPCI injection valve.
81-00-37	B	Defects in single and dual Bailey Alarms.
82-00-01	B	Agastat E7000 series time-delay relays: shorter time-out above 165°F.

* withdrawn

TABLE 2
VIOLATIONS (Interim Criteria Severity)

A. SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

Severity Level I	0
Severity Level II	0
Severity Level III	0
Severity Level IV	8
Severity Level V	8
Severity Level VI	3
Deviations	2
TOTAL:	21

B. SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

Severity Level I	0
Severity Level II	0
Severity Level III	0
Severity Level IV	4
Severity Level V	3
Severity Level VI	2
Deviations	0
TOTAL:	9

C. TOTAL VIOLATIONS

Of the 9 Unit 2 Violations, 8 are common to both units; one Severity Level V Violation was unique to Unit 2. There were, therefore, 22 total Violations.

TABLE 2A

ENFORCEMENT DATA

UNIT #1 March 1, 1981 - February 28, 1982

Inspection Number	Dates	Subject	Rqrmt.	Sev.	Area
81-08	3/23-4/4/81	Inadequate ISI Accessibility	App.B	IV	8
81-08	3/23-4/4/81	Inadequate Control Over Activities Affecting Safety-Related Structures	App.B	IV	8
81-08	3/23-4/4/81	Incorrect Translation of Requirements Into Drawings	App.B	IV	7
81-08	3/23/-4/4/81	Inadequate Procurement Documentation	App.B	IV	7
81-08	3/23-4/4/81	Issue of QA Procedures Without Review/Comment	App.B	V	8
81-08	3/23-4/4/81	No Procedure for NCR Trend Analysis	App.B	V	8
81-08	3/23-4/4/81	Incorrect Use of QA Procedure	App.B	VI	8
81-08	3/23-4/4/81	Improper Auditor Certification	App.B	VI	8
81-08	3/23-4/4/81	Cabinets Not Installed Per FSAR		DEV	7
81-10	5/4-6/5/81	Failure to Test Air Operated Feedwater Valves for Loss of Air		DEV	3
81-10	5/4-6/5/81	Unapproved HCU Venting Procedure in Control Room	App.B	V	1
81-12	5/18-2/2/81	Electrical Raceway/Conduit Separation	App.B	V	6
81-14	7/6-10/81	Installed Components Not Per Certified Vendor Prints	App.B	IV	7
81-19	9/16-10/19/81	NSSS Data Sheet Specifying Insufficiently Accurate Turbine Trip Switches	App.B	V	3
81-25	10/20-11/18/81	Failure to Follow Written Procedures	App.B	VI	1
81-26	12/7-11/81	Failure to Maintain Control Over Modification of Electrical Equipment	App.B	IV	6

TABLE 2A

ENFORCEMENT DATA

UNIT #1 (Cont'd)

Inspection Number	Dates	Subject	Rqrmt.	Sev.	Area
82-04	1/27-3/1/81	Improper Incorporation of Requirements in Preoperational Test	App.B	V	3
82-04	1/27-3/1/81	Failure to Properly Follow the Startup Administrative Manual Procedure for Processing the Resolution to an SFR	App.B	V	3
82-04	1/27-3/1/81	Failure to Have Procedural Controls Adequate to Prevent Flooding of Safety-Related Equipment	App.B	IV	8
82-04	1/27-3/1/81	Failure to Properly Verify Closure Times of the Containment Isolation Valves	App.B	IV	3
82-04	1/27-3/1/81	Temporary Switch Connected to Terminal Box TB0144 With No Temporary Modification Tag and no Entry in the Temporary Modification Log	App.B	V	3

TABLE 2A

ENFORCEMENT DATA

UNIT #2 March 1, 1981 - February 28, 1982

Inspection Number	Dates	Subject	Rqrmt.	Sev.	Area
81-04	3/23-4/4/81	Inadequate Design for ISI Accessibility	App.B	IV	8
81-04	3/23-4/481	Incorrect Translation of Requirements into Drawings	App.B	IV	7
81-04	3/23-4/4/81	Inadequate Procurement Documentation	App.B	IV	7
81-04	3/23-4/4/81	QA Procedures Issued Without Review/Comments	App.B	V	8
81-04	3/23-4/4/81	Incorrect Use of QA Procedure	App.B	VI	8
81-04	3/23-4/4/81	Improper Auditor Certification	App.B	VI	8
81-06	5/18-22/81	Electrical (Raceway/Conduit Separation)	App.B	V	6
81-06	5/18-22/81	Instrumentation (Tagging of Nonconforming Items)	App.B	V	7
81-07	7/6-10/81	Installed Components Not Per Certified Vendor Print	App.B	IV	7

TABLE 3
INSPECTION REPORT ACTIVITIES
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 1

REPORT	INSPECTOR	AREAS INSPECTED
81-07	Resident	Routine
81-08	Specialist	Quality Assurance, Design Controls, Project Management, Construction Controls, Maintenance, and Surveillance. (CAT)
81-09	Specialist	Training
81-10	Resident	Routine
81-11	Specialist	Welding and Radiography: Welding Documentation, Radiography Technician Qualifications, Q and Non-Q Welding Post Weld Heat Treatment
81-12	Specialist	Electrical/Instrumentation
81-13	Resident	Routine
81-14	Specialist	Electrical/Instrumentation
81-15	Project	Bulletins, Circulars, and CDR Close Out.
81-16	Resident	Routine
81-17	Project/ Specialist	Electrical
81-18	Specialist	Security
81-19	Resident	Routine
81-20	Specialist	Electrical/Instrumentation
81-21	Specialist	Security
81-22	Specialist	Preoperational and Startup Test Program

Table 3 (Cont'd)

REPORT	INSPECTOR	AREAS INSPECTED
81-23	Specialist	Construction QC Activities.
81-24	Specialist	Administrative Controls
81-25	Resident	Routine
81-26	Project/ Specialist	Electrical
81-27	Resident	Routine
81-28	Specialist	Preoperational Test Program Implementation
81-29	Resident	Routine
82-01	Project	Outstanding Items Closeout
82-03	Project	Outstanding Items Closeout
82-04	Resident	Routine
82-05	Specialist	Security
82-07	Project	Pipe Hangers and Supports

TABLE 3
INSPECTION REPORT ACTIVITIES
SUSQUEHANNA STEAM ELECTRIC STATION, UNIT 2

REPORT	INSPECTOR	AREAS INSPECTED
81-04	Specialist	Quality Assurance, Design Controls, Project Management, Construction Controls, Maintenance and Surveillance. (CAT)
81-05	Specialist	Welding and Radiography.
81-06	Specialist	Electrical/Instrumentation
81-07	Specialist	Electrical/Instrumentation
81-08	Project	Bulletins, Circulars, and CDR Closeout
81-09	Project/ Specialist	Electrical
81-10	Specialist	Electrical/Instrumentation
81-11	Specialist	
81-12	Specialist	Administrative Controls
81-13	Project/ Specialist	Electrical
82-01	Project	Outstanding Items Closeout
82-02	Project	Outstanding Items Closeout
82-03	Project	Pipe Hangers and Supports

TABLE 4
INSPECTION HOURS SUMMARY (3/1/81 - 2/28/82)
SUSQUEHANNA STEAM ELECTRIC STATION

	Functional Area	Hours	% of Time
1.	Readiness for Operations	390	16
2.	Maintenance	145	6
3.	Preoperational Testing	804	32
4.	Emergency Preparedness	32	1
5.	Security and Safeguards	78	3
6.	Electrical Power Supply & Distribution	105	4
7.	Instrument and Control Systems	137	5
8.	Quality Assurance	820	33
9.	Licensing Activities	NA	0
		2,511	100