U.S. NUCLEAR REGULATORY COMMISSION
REGION V

Report Nos: 50-275/92-09 and 50-323/92-09

Docket Nos: 50-275 and 50-323

License Nos: DPR-80 and DPR-82

Licensee: Pacific Gas and Electric Company
77 Beale Street, Room 1451
San Francisco, California 94106

Facility Name: Diablo Canyon Units 1 and 2

Inspected At: Corporate Office, San Francisco, California

Inspection Conducted: March 10-11, 1992 at Corporate office
March 16-17, 1992 in RV office

Inspectors: D. Kirsch, Chief, Reactor Safety Branch
R. Huey, Enforcement Officer
S. Matthews, QA Specialist, VIB, NRR

Approved By: D. Kirsch 4/7/92
D. Kirsch, Chief, Reactor Safety Branch Date Signed

Summary:

Inspection from March 10-17, 1992 (Report Nos. 50-275/92-09 and 50-323/92-09

Safety Issues Management System (SIMS) Items: None

Results:

General Conclusions on Strengths and Weaknesses:

Strengths - In preparation for the inspection, the licensee assembled a comprehensive history of PG&E activities regarding the purchase of the sixth generator. The history candidly identified the weaknesses observed in the procurement processes.

Weaknesses - The licensee's corrective actions to resolve a nonconformance report, issued in 1989, regarding inadequate supplier audits failed to assess the adequacy of the audits of NEI Peebles Electric Products Inc. - Cleveland, and Peebles Electric Machines - Scotland, and recognize the potential impact on the sixth generator procurement. In addition, the quality assurance organization failed to

identify certain irregularities in the procurement process such as supplier audit inadequacy, the issuance of a purchase order to a supplier who was not listed on the Qualified Suppliers List, and performance of commercial grade procurement oversight by a contractor who had not developed an adequate commercial grade procurement and dedication program.

Safety Significant Matters: None

Summary of Violations and Deviations:

This inspection identified two apparent violations of NRC requirements:

1. Failure to comply with approved procedures for dispositioning of draft supplier audit findings.

2. Failure to implement appropriate corrective actions for inadequate supplier audits.

Open Items Summary:

This inspection opened three new open items.

## Details

1. Persons Contacted

*W. H. Fujimoto, Vice President, Nuclear Technical Services
*R. C. Anderson, Manager, Nuclear Engineering and Construction Services (NECS)
*M. R. Tressler, Diablo Canyon Project Engineer, NECS
J. A. Sexton, Manager, Quality Assurance
*J. C. Young, Director, Procurement Quality Assurance (PQA)
*U. A. Farradj, Group Leader, NECS
*J. E. Tompkins, Director, Nuclear Regulatory Affairs
*E. R. Kahler, Group Leader, Replacement Parts Engineering (RPE)
*E. Walters, Engineer, RPE
*T. W. Packy, Lead Auditor, PQA
C. Patrick, Lead Auditor, PQA
*M. S. Dobrzensky, Senior Supervisor, PQA

*Attended the Exit Interview on March 11, 1992

2. Purpose of Inspection

The purpose of the inspection was to

- Assess whether the licensee had defined and implemented an appropriate quality assurance program for the procurement of the generator portion of the sixth Emergency Diesel Generator (EDG) unit,
- Assess whether the licensee's quality assurance and engineering organizations had acted responsibly in dealing with the generator procurement and the problems identified,
- Assess whether the corrective actions in response to Nonconformance Report number DCO-89-QA-N007 were adequately implemented for the generator procurement, and
- Determine the circumstances which contributed to the omission of an audit finding, regarding an undeveloped commercial grade dedication program on the part of NEI Peebles - Electric Products, Inc. (P-EP) of Cleveland, Ohio, from the final audit report and which remained unresolved by the licensee.

In order to accomplish this purpose the inspectors held discussions with the licensee's engineering and quality assurance organization regarding the generator procurement intent and history, and interviewed members of the audit staff.

3. Generator Procurement (Inspection Procedure No. 92702)

a. Background

The inspector discussed, with responsible licensee personnel, the philosophy and intent of the generator procurement for the sixth EDG unit. The licensee indicated that a basic premise was that the generator for the sixth EDG would be identical to the generators installed on the other five EDG units, and the spare generator, procured in 1986-87. The reasons for this desired commonality primarily involved common spare parts, common design of the generator and control panels, common test and maintenance procedures, and common staff knowledge, among others.

The licensee stated that the decision was made to procure the sixth generator from the same manufacturer who had manufactured the other five generators, and the spare, and deal with the qualification of the prime contractor/supplier (P-EP) and manufacturer, Peebles Electrical Machines (PEM), of Edinburgh, Scotland, separately. PG&E stated that they had some confidence that the generator quality would be acceptable based upon engineering participation in audits and satisfactory procurement and operation of five installed generators. The licensee stated their belief that if anything was wrong with the generator it would be made evident in the testing and could be repaired, and, further, that their intent was to scrap the generator unit at any point that it became clear that the unit could not be deemed qualified for service and sufficiently reliable. These decisions were dictated by schedule considerations which required having the generator tested as a unit with the diesel in Canada in May 1991, and installed and operational by the completion of the 1993 Unit 2 refueling outage.

The licensee purchased the generator for the sixth EDG unit from P-EP, a 10 CFR 50, Appendix B, supplier. P-EP contracted with a subsidiary, PEM, located in Scotland, for the manufacture of the generator. PEM was not an Appendix B qualified supplier. Accordingly, P-EP would need to assure that appropriate commercial grade procurement and dedication processes were exercised for the generator component parts.

b. Sixth EDG Procurement Chronology

The licensee supplied and discussed the following chronology.

- In June 1988, a Gulf States Utilities audit resulted in PG&E removing P-EP from their Qualified Supplies List (QSL).

- PG&E conducted audit (89180S) of P-EP during July, 1989, in an attempt to qualify P-EP for inclusion on the QSL. Problems were found, most notably that a P-EP audit of PEM

was not an adequate audit. The audit was not sufficient to qualify P-EP as a QSL supplier of the generator.

- PG&E conducted an audit of PEM during August 1989 in an attempt to requalify PEM as a qualified supplier. As a result of problems found, the audit was deemed not sufficient to requalify PEM and was not listed on the QSL. PEM was removed from the QSL in January 1990 as a result of corrective action in response to a nonconformance report regarding inadequate supplier qualification audits (NCR #DCO-89-QA-N007).

- PG&E conducted another qualification audit (89295S) of P-EP on December 11, 1989.

  .. An interview with the lead auditor established that the audit was originally planned as a commercial grade procurement and dedication survey and that the audit was upgraded to an Appendix B supplier qualification audit after the audit was completed. The NRC concluded that the upgrade was not well managed and inappropriate.

  .. The auditor indicated that he only had slightly more than a week to plan the audit in addition to several other duties at the time. The NRC concluded that this seemed an inadequate amount of time to plan an audit of this scope.

  .. The audit was a one day audit, an insufficient amount of time to conduct an audit of this scope.

  .. The audit was based upon a draft procurement specification (SP-D-Peebles/Rev. 3) which was not issued until later, on February 6, 1991.

  .. The audit was conducted even prior to the issuance of specification SP-D-Peebles/Rev. 2 on February 22, 1990. The audit report was finally issued on April 17, 1990.

  .. The licensee asserted that the procurement specification issued on February 22, 1990 accounted for resolution of the findings of the audit; however, there was no documentation of this assertion.

  .. The audit report was delayed due to a two month medical leave by the lead auditor. The draft was available in January 1990; however, comments of licensee management were not able to be resolved by the lead auditor.

.. P-EP was ultimately listed on the Qualified Suppliers List on June 1, 1990 based upon this one day audit. The purchase order, SP-D-Peebles/Rev. 2, was issued to P-EP on February 22, 1990, well before P-EP was placed on the QSL in June 1990.

.. A draft Audit Finding Report (AFR) was issued to P-EP by the lead auditor on December 11, 1989. The AFR identified that P-EP had not fully developed a commercial grade dedication program for PG&E identified critical parts. This AFR was not tracked to resolution or addressed by the audit report, facts which remained unknown to the licensee until brought to their attention by the NRC on February 20, 1992.

This is an apparent violation of procedure QAA-WI-305, which requires that the audit finding report be included in the audit package, and procedure QAA-WI-317, which requires that audit finding reports be tracked in accordance with procedure QAA-WI-302. (Violation, 50-323/92-09-01)

.. A followup audit was deemed necessary by the audit team and was not done until August 1990, about nine months after the original audit.

.. The NRC had the following conclusions regarding this audit and its relationship to future events.

The NRC concluded that the audit was inadequately planned, and inadequately executed to adequately address the intended scope. The scope was inappropriately upgraded, after the audit, to be an Appendix B supplier qualification audit instead of the more limited commercial grade survey, originally planned. The audit was conducted using a draft procurement specification, which would not be issued until February 1991. The purchase order to P-EP was issued in February 1990, before the qualification audit report was issued in April 1990, and before P-EP was placed on the QSL in June 1990. The followup audit was not done until August 1990, after the purchase order was issued to P-EP and after P-EP was placed on the QSL. The audit finding regarding P-EP's inadequate commercial grade dedication program was never adequately resolved, even though PEM (a subcontractor to P-EP) procured generator parts commercially and supplied these to P-EP as a completed generator.

- PEM procured parts for the generator during early 1990. PG&E had one supplier audit of PEM during this parts procurement phase.

- A third party audit of P-EP was conducted by Houston Light and Power during late July 1990. Thirteen Audit Finding Reports were issued to P-EP.

- An implementation audit of P-EP was conducted in mid August 1990. This was a better planned audit than the December 1989 one day audit and had a longer duration.

- P-EP was removed from the PG&E QSL on September 1, 1990. The spare generator, purchased earlier and in storage at the Diablo Canyon warehouse was put on hold. The procurement of the sixth generator, however, continued, apparently without PG&E compensatory measures to compensate for the removal of P-EP from the QSL.

- PG&E determined, in August 1990, that an Engineering Evaluation of the sixth generator was necessary to determine the adequacy of the generator in light of the large number of supplier audit findings on P-EP and PEM. The spare generator in the warehouse on site was placed on hold pending completion of the Engineering Evaluation.

- A joint P-EP/PG&E commercial grade survey of PEM was conducted in October 1990. The PG&E team consisted of quality assurance and engineering personnel. The audit resulted in six audit finding Reports and a request for an Engineering Evaluation to evaluate the impact of the findings on the adequacy of the sixth generator.

- Assembly of the generator occurred at PEM during the period of October 1990 through February 1991. During this period PG&E had source inspectors at PEM on two occasions to monitor the generator quality and testing. The generator was shipped in late February 1991.

- The final Purchase Order (SP-D-Peebles/Rev. 3) was issued to P-EP on February 6, 1991. At this time the generator assembly was essentially complete and testing was in progress.

- P-EP was reinstated on the QSL for a One-Time purchase on March 1, 1991, after the generator was constructed and shipped from PEM.

- A verification visit to P-EP on March 13, 1991 found that the P-EP corrective actions applicable to a one-time purchase were not acceptably implemented. A second

verification inspection to P-EP during July 1991 found that P-EP had adequately implemented corrective actions applicable to a one-time purchase.

- PG&E issued the final Engineering Evaluation of P-EP and PEM activities on October 31, 1991, concluding that the spare and sixth generator were acceptable.

4. Comparison of PG&E's Audit Findings at P-EP and PEM to the NRC's Inspection Findings at P-EP and PEM (92702)

The NRC conducted an inspection of P-EP, in August of 1991, to evaluate P-EP's production of an emergency AC power generator for PG&E. As a result of this inspection, documented in Inspection Report (IR) 99900772/91-01, the NRC issued a Notice of Nonconformance to P-EP that identified four areas where P-EP's activities failed to comply with NRC requirements in Appendix B to Title 10, of the Code of Federal Regulations, Part 50 (10 CFR Part 50). The NRC also conducted an inspection of PEM, in September of 1991 to evaluate PEM's manufacture of the generator for PG&E. As a result of this inspection, documented in IR 99901065/91-01, the NRC issued a Notice of Nonconformance to PEM that identified two areas where PEM's activities failed to comply with P-EP's expectations necessary to support certification that the generator complied with the requirements of Appendix B to 10 CFR Part 50.

In its response to IR 99900772/92-01, dated February 12, 1992, PG&E provided (1) an itemization of the NRC's issues identified in IR 99900772/91-01, (2) the corresponding PG&E audit findings, and (3) the compensatory actions taken by PG&E to resolve the findings. PG&E's response did not address the NRC's findings in IR 99901065/91-01 (PEM). The team's review of certain sections of PG&E's response resulted in the observations described below.

a. Section III - Additional Information on P-EP related Open Items Identified in NRC IR 50-323/91-202

This section of PG&E's response discusses three concerns related to the generator identified in the NRC's letter to PG&E, dated November 15, 1991, which transmitted IR 50-323/91-202.

(1) Rotor Pole Magnet Wire: PG&E stated that P-EP had reported that it is evaluating the impact of the varnished wire that was used in the fabrication of the generator's pole windings (P-EP had specified the use of unvarnished wire). P-EP had not completed its evaluation at the time of this inspection. This issue was identified by the NRC during its inspection of PEM. This issue was not identified by PG&E.

(2) Bakelite Electrical Separation Ring: The commercial grade bakelite electrical separation ring was used as a load bearing component-part of the rotor shaft support assembly.

PG&E stated that it agreed that the ring is part of the support system of the bearing housing, due to the sandwich design, and lack of any known failure of this design. The mechanical strength was not considered a critical design characteristic. PG&E, however, did not demonstrate to the team an engineering evaluation to substantiate this conclusion or that assured the adequacy of the commercial grade item to perform its function in support of the rotor shaft assembly. This issue was identified by the NRC during its inspection of PEM. This issue was not identified by PG&E.

(3) Specification of Critical Components: PG&E stated that although the list of 27 critical items, identified in Revision 3 of its purchase order (PO) to P-EP was not signed-off until after the generator was completed, these items were examined during the October 1990 audit of PEM. However, not all of the 27 critical items were examined during the audit; the audit examined only a sample (seven items) of the identified 27 critical items.

Revision 1 of PG&E's PO to P-EP incorporated a list of 14 critical items that, according to PG&E, were identified by P-EP as a list of critical items that may be procured and dedicated by P-EP then supplied to PEM. However, the PG&E auditors that conducted the December 1989 audit of P-EP, the associated audit documentation, and associated correspondence appeared to indicate that the critical items were developed by PG&E's technical staff that supported the December 1989 audit. This issue was identified by the NRC during its inspections of P-EP and PEM.

b. Section IV - Additional Information on Open Items Identified in NRC Inspection Report No. 99900772/91-01

This section of PG&E's response reviews the nonconformances and the unresolved item identified in IR 99900772/91-01.

(1) Nonconformance 99900772/91-01-01: This nonconformance identified that P-EP failed to (1) establish adequate measures to control changes in design, materials, and manufacturing processes commensurate with those controls applied to the original design, (2) provide for performing design verification of the changes in design, materials, and manufacturing processes, (3) demonstrate that the changes in the design were controlled commensurate with the design controls applied to the original design, and (4) demonstrate that the original design basis had been correctly translated into revised specifications, drawings, procedures, and instructions.

PG&E stated, in part, that its audit of P-EP in August 1990 (Audit 90197S) identified corresponding programmatic findings, documented in its audit finding report (AFR) 90-067. PG&E's response stated, in part, that the evaluation of design changes and specifications and procedures equivalency was not required prior to the 1984 time frame since the issues requiring this review were associated with a lack of formal interface between P-EP and PEM. This nonconformance, however, identified issues with P-EP's design control that were independent of the P-EP and PEM interface.

PG&E reported to the team that it had reconsidered this response in part because of the like-for-like guidance provided by the NRC in Generic Letter (GL) 91-05, "Licensee Commercial-Grade Procurement and Dedication Programs." PG&E reported that its response, compensatory actions, and engineering evaluation will be revised to evaluate the changes in design, material, and the manufacturing process since the original generators were supplied in 1969.

This evaluation is necessary to determine if any of these changes could impact the functional characteristics and, ultimately, the generator's ability to perform its required safety function. The revised engineering evaluation will be evaluated by the NRC during a future inspection.

(2) Nonconformance 99900772/91-01-02: This nonconformance identified that P-EP failed to: (1) establish adequate measures to control the activities between it and its sister organization, PEM, that consisted of the review, approval, release, distribution, and revision of documents involving their respective design interface, (2) demonstrate that the results of PEM's design translation activities were equivalent to the design requirements specified by P-EP, (3) adequately document the critical requirements or acceptance criteria compared during the equivalency evaluation, and (4) adequately document the results of the equivalency evaluation or other bases to support P-EP's conclusion that PEM's procedures and specifications were equivalent.

PG&E stated, in part, that its Audit 90197S identified corresponding programmatic findings in AFR 90-068. However, this AFR identified (1) that P-EP's external audit/evaluation program used to qualify suppliers (e.g., PEM) was not adequate to comply with PG&E's specification and (2) that P-EP's quality program did not include provisions for the dedication of commercial grade items. PG&E did not identify the P-EP and PEM interface issue addressed in this nonconformance until the P-EP/PG&E audit of PEM conducted in October 1991 and documented in P-EP's Audit Report 9003. Audit Report 9003 identified this issue

in AFR 9003-4 (P-EP and PEM interface) and AFR 9003-6 (equivalency of PEM procedures and specifications to P-EP procedures and specifications).

PG&E's response stated, in part, that in conjunction with P-EP, it is formulating a plan for identifying additional reviews and documentation requirements needed to ensure the adequate resolution of the NRC's nonconformance.

(3) Nonconformance 99900772/91-01-03: This nonconformance identified that P-EP failed to: (1) establish adequate measures to provide for the selection and review for suitability of the application for materials, parts, and equipment that were procured as commercial grade items and were essential to the generator's ability to perform its essential to the generator's ability to perform its intended design and safety-related function; (2) ensure the suitability of the stator coil's resistance temperature detectors, slip rings, adhesives, and mounting sleeve insulator for the slip rings; and (3) ensure the suitability of the materials, parts, and equipment PEM procured.

PG&E stated that its Audit 90197S identified corresponding programmatic findings in AFRs 90-068 and 90-069. However, PG&E first identified the programmatic issue addressed in this nonconformance, that P-EP's quality program did not include provisions for the dedication of commercial grade items, in its December 1989 audit of P-EP, as documented in draft AFR No. 3. PG&E's utilization of the December 1989 audit and its results is discussed in paragraph 3.b of this report.

The adequacy of PG&E's response and corrective actions with regard to the NRC's findings related to certain critical items (e.g., the stator coil's resistance temperature detectors, slip rings, adhesives, and mounting sleeve insulator for the slip rings) will be evaluated by the NRC during a future inspection.

(4) Nonconformance 99900772/91-01-04: This nonconformance identified that P-EP failed to establish adequate measures to ensure (1) that activities affecting quality were prescribed by documented instructions, procedures, or drawings; (2) that activities affecting quality were accomplished in accordance with these instructions, procedures, or drawings; and (3) that instructions, procedures, or drawings include appropriate quantitative or qualitative acceptance criteria for determining that important activities were satisfactorily accomplished. P-EP also failed to demonstrate that the activities affecting quality (1) to fit the dovetail rotor pole assemblies to the rotor spider assembly, (2) to perform the brazing required

to fabricate the rotor spider assembly, and (3) to perform brazed joint spliced-connections in the field coil winding were documented or accomplished in accordance with instructions, procedures, or drawings that contained quantitative or qualitative acceptance criteria and were equivalent to those specified by P-EP.

PG&E stated that its Audit 90197S identified corresponding programmatic findings in AFRs 90-068 and 90-072, and in P-EP/PG&E's Audit Report 9003, AFR 9003-5. Although AFR 90-068 identified (1) that P-EP's external audit/evaluation program used to qualify suppliers (e.g., PEM) was not adequate to comply with PG&E's specification and (2) that P-EP's quality program did not include provisions for the dedication of commercial grade items, neither of these issues are applicable to the issues addressed in this nonconformance. AFR 90-072 identified that P-EP's internal audit program was not adequate and, therefore, it also did not address the issues in this nonconformance. AFR 9003-5 addressed the failure of PEM's procedure to provide for the calibration of the crimping tool or inspection of the crimped connections. PG&E's response with regard to the applicability of AFRs 90-068, 90-072, and 9003-5 did not adequately address the issue addressed in this nonconformance.

PG&E also responded that detailed procedures were not required for the activities that affect safety during the fabrication of the rotor pole spider assembly, as these operations were part of normal shop practice. The NRC team determined that these operations were part of normal shop practice when the generators were manufactured in P-EP's facility, however, these operations were not part of PEM's normal shop practice, particularly since it was PEM that requested the guidance from P-EP. PG&E added that if the rotor pole was not assembled correctly, the result would be excess vibration, particularly during the overspeed portion of the test. The basis for PG&E's conclusion was not demonstrated to the team (i.e., vibration monitoring data recorded during the overspeed test and post-test inspection documentation of the rotor pole spider assembly).

The adequacy of PG&E's response and corrective actions with regard to the NRC's findings related to the welding of the rotor pole spider assembly studs and spliced connections in the field coil windings will be evaluated by the NRC during a future inspection.

(5) Unresolved Item 99900772/91-01-05: This unresolved item addressed the concern that P-EP's original quality assurance manual (QAM-100), in effect during the design, manufacture, and test of PG&E's generator, did not include measures to

adequately control all of the activities affecting the quality and safety-related function of components and parts. Although P-EP's second quality assurance manual (QAM-101) superseded QAM-100, it contained several weaknesses that required strengthening before its implementation. Because the team did not evaluate the implementation of QAM-101, this concern would be evaluated in more detail during a future inspection.

PG&E's response that this Unresolved Item did not impact their generator, since QAM-101 is not applicable to this PG&E procurement, is considered adequate and no further discussion of this issue by PG&E is required.

5. Adequacy of PG&E's Engineering Evaluation. (92702)

Section V, "PG&E Engineering Evaluation of P-EP for Purchase of Sixth Generator," of PG&E's response, dated February 12, 1991, provided an overview of the engineering evaluation performed by PG&E to quality P-EP, and according to PG&E it includes (1) a description of PG&E's procedural requirements, (2) a summary of the P-EP NEMP 12.4 Engineering Evaluation, Revision 0, and (3) a summary of the additional information incorporated into Revision 1 of NEMP 12.4. The team's review of certain sections of PG&E's Engineering Evaluation resulted in the observations described below.

a. Product Performance Evaluation

This section of PG&E's Engineering Evaluation provided an evaluation of the history of P-EP's generators in the nuclear industry. To determine whether the history of P-EP's generator affects the quality of the new generator, PG&E reviewed the following documents: NPRDS reports, 10 CFR Part 21 reports and utility reports, Bulletins, Letters, SERs, SCERs, LERs, Restricted Equipment List, NRC IRs, and GIDEP reports.

The team's review of this portion of PG&E's Engineering Evaluation determined that where the evaluation related to the same, or similar, parts or component-parts identified by PG&E as critical items, the evaluation lacked sufficient detail addressing the correlation of the item reviewed to the item installed in new generator. Specifically, the evaluation did not address the part and component-part issued identified in IR 99900772/91-01 and IR 99901065/91-01.

b. Supplier Qualification

This section of PG&E's Engineering Evaluation provided a technical evaluation of PG&E's audit findings of P-EP and PEM, evaluated the qualification of the new generator purchase, and determined the acceptability of the stocked spare. The list of critical items were separated according to what facility procured them, because,

according to PG&E, the items supplied by PEM were qualified by the P-EP/PG&E Audit 9003 and the Engineering Evaluation, while those items supplied by P-E were qualified by P-EP's commercial grade dedication program and the Engineering Evaluation.

The team's evaluation of this section of the Engineering Evaluation resulted in the following observations:

- PG&E's basis for determining that its list of 27 critical items represented a complete list of the generator's critical items was not adequately demonstrated. Since the team believes that there are conflicting versions of how and who identified the critical items, it is therefore necessary to evaluate the engineering basis for the list of critical items.

- As reported by PG&E, the technical evaluation of the Audit 90197S findings relating to design control will be revised to evaluate the changes in design, material, and the manufacturing process since the original generators were supplied in 1969.

- The evaluation of P-EP's and PEM's commercial grade dedication activities for the specific parts and component-parts identified in IRs 99900772/91-01 and 99901065/91-01 will be evaluated in detail during a future inspection.

6. PG&E's Compensatory Actions for NRC's Inspection Findings at P-EP and PEM. (92702)

PG&E's compensatory actions for all of the NRC's specific findings related to critical parts and component-parts of the generator that were identified during inspections of P-EP and PEM will be evaluated in detail by the NRC during a future inspection.

7. Review of Licensee Actions to Address Supplier Audit Findings (92702)

Previous NRC inspections of P-EP and PEM during August and September 1991, identified several significant deficiencies in the implementation of 10 CFR 50, Appendix B quality assurance program requirements, as well as identifying some specific technical deficiencies in the products being supplied. One of the objectives of these NRC inspections was to evaluate whether PG&E had implemented appropriate measures for assessing the adequacy of its supplier quality assurance (QA) programs and responded appropriately to any findings resulting from such assessments.

In this regard, the inspectors noted that PG&E had identified supplier QA program problems in August 1990 that were similar to the programmatic concerns subsequently identified by the NRC. Accordingly, the inspectors reviewed the actions taken by the licensee in response to their August 1990 findings, as well as evaluating whether the problems

identified in August 1990 should have been identified earlier in the procurement process (especially in light of significant lessons identified during a comprehensive PG&E review of supplier procurement problems in 1989).

a. Licensee Response to August 1990 Supplier Audit Findings

As noted above, during an August 1990 audit of P-EP (Audit 90197S), PG&E identified numerous significant programmatic deficiencies in the supplier's implementation of Appendix B quality assurance requirements. PG&E recognized that the results of this audit conflicted with the conclusions of an earlier audit performed in December 1989 (Audit 89295S), which served as the supplier qualification audit for the February 1990 placement of a purchase order with P-EP for a Diablo Canyon diesel generator. Accordingly, PG&E initiated an Action Request (A0201828) in August 1990 to assess the reasons for the differences between the 1989 and 1990 audit results. This assessment was subsequently upgraded to a safety related Quality Evaluation (Q0008302) in January 1991 and a Nonconformance Report (NCR 92-N004) in February 1992.

The inspectors concluded that the scope and corrective actions associated with NCR 92-N004 were too narrowly focused only on the specific shortcomings of audit 89295S, instead of recognizing the broader and more generic significance of other potentially inadequate audits conducted between July 1989 and December 1990. In particular, the inspectors noted the following:

(1) PG&E identified that Audit 89295S and the subsequent placement of the P-EP purchase order were deficient in several respects. In particular: audit planning, scope and specification bases were deficient; audit conclusions were based on inadequate objective evidence; licensee procedures for disposition of preliminary audit findings were violated; and procedures requiring suppliers to be on a Qualified Suppliers List prior to purchase order placement were violated.

(2) Each of the Audit 89295S findings are similar to findings associated with an earlier comprehensive PG&E evaluation of supplier audit deficiencies issued in July 1989 as an Nonconformance Report (NCR 89-N007). Final corrective actions associated with NCR 89-N007 were not signed off as being fully implemented until December 1990.

(3) Since Audit 89295S, which occurred in December 1989, clearly did not implement the lessons of NCR 89-N007, the inspectors concluded that it is likely that other audits performed during the August 1989 through December 1990 time period may be similarly flawed.

During the exit meeting, the licensee agreed with the inspector's conclusions and committed to expand the scope of NCR 92-N004 corrective actions to include a review of all audits performed during the August 1989 through December 1990 time period.

b. Earlier Opportunities to Identify Supplier Procurement Problems

As noted above, PG&E had identified many of the types of audit deficiencies associated with Audit 89295S several months prior to performing the audit. However, these lessons were not factored into Audit 89295S, although the audit served as the basis for placing a major, safety related purchase order. Although it is recognized that full implementation of NCR 89-N007 lessons were continuing throughout the July 1989 to December 1990 time period, PG&E failure to implement any of those lessons during Audit 89295S appeared to the inspectors to be a significant missed opportunity. This failure precluded timely identification and correction of the significant problems that were subsequently identified in July and August 1990, well after significant portions of the purchase order had already been completed. As a result of the inadequate 1989 audit, a safety related purchase order was placed with P-EP in February 1990, which did not meet 10 CFR 50, Appendix B quality assurance program requirements, as specified in the purchase order documents. This deficiency was not identified until receipt of an audit from Houston Light & Power in July 1990 (disqualifying P-EP for safety related procurement), and a similarly disqualifying PG&E audit performed in August 1990.

Failure to implement timely actions to preclude recurrence of the supplier audit deficiencies addressed by NCR 89-N007 for Audit 89295S is an apparent violation of 10 CFR 50, Appendix B, Criterion 16 (Violation, 50-323/92-09-02). Failure to ensure proper implementation of quality assurance requirements associated with the purchase of safety related equipment from P-EP is an apparent violation of 10 CFR 50, Appendix B, Criterion 7 (Non-cited Violation, 50-323/92-09-03). This violation will not be the subject of NRC enforcement action because the licensee's efforts in identifying and correcting the violation meet the criteria specified in Section VII.B.2 of the Enforcement Policy.

During the exit meeting, the inspectors emphasized several points relating to the similarity of this inspection's findings with those described in Inspection Reports 50-323/89-22 and 50-323/89-27. These similarities appear to indicate that PG&E has not fully implemented some of the lessons that should have been learned from the significant Quality Assurance program deficiencies that were addressed during those inspections. In particular, the inspectors noted that:

a. One of the major findings of the 1989 NRC inspections was that PG&E had too narrowly limited the scope of their review of inadequate supplier audits to only those performed by contractors, rather than also addressing similar deficiencies in PG&E performed

audits. As discussed above, this inspection noted that the scope of PG&E's current review of supplier audit deficiencies (NCR 92-N004) was also too narrowly focussed.

b. Another finding of the 1989 NRC inspections was that PG&E audit personnel were experiencing difficulty raising concerns to their QA supervision, resulting in significant program deficiencies not being properly evaluated and resolved in a timely manner. During interviews with PG&E audit personnel during this inspection, it again appeared that auditor concerns associated with the scope and definition of Audit 89295S were not properly evaluated or resolved in a timely manner. Although the interviewed personnel indicated that they believe that the circumstances which resulted in those problems have now been corrected, the fact that they occurred warrants continuing PG&E attention to preclude recurrence.

8. Exit Interview

The inspectors discussed the findings of the inspection, as indicated above, with members of the licensee's staff, as indicated in paragraph 1, at the conclusion of the inspection on March 11, 1990 at the Corporate Office. The licensee acknowledged the inspection findings and again reiterated that their management had determined to procure a generator alike those already installed at Diablo Canyon, in full recognition of the problems found with the quality paperwork of the suppliers, and do whatever was necessary to later establish the quality and acceptability of the generator by Engineering Evaluation and testing. The licensee further stated that, in the event that it became, or becomes, apparent at any point that the generator cannot be qualified for service, their intent was to scrap the machine short of accepting and placing the machine in operation.