PACIFIC GAS & ELECTRIC COMPANY

DIABLO CANYON NUCLEAR POWER PLANT

INDEPENDENT DESIGN VERIFICATION PROGRAM

INTERIM TECHNICAL REPORT
STATUS REPORT ON CONSTRUCTION QUALITY ASSURANCE EVALUATION
OF
WISMER & BECKER

PERFORMED BY

STONE & WEBSTER ENGINEERING CORPORATION

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PROJECT MANAGER Frank Sestak Jr. DATE 3-1-83

F. Sestak, Jr.

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DIABLO CANYON NUCLEAR POWER PLANT - UNIT 1
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INTERIM TECHNICAL REPORT

STATUS REPORT ON CONSTRUCTION QUALITY ASSURANCE EVALUATION
OF
WISMER & BECKER

This is the thirty-eighth of a series of Interim Technical Reports prepared by the DCNPP-IDVP for the purpose of providing a status report of the program.

This report the recommendations and conclusions of the IDVP with respect to the initial sample with the exception of EOI File 9026 which is a Finding to be resolved.

As IDVP Program Manager, Teledyne Engineering Services (TES) has approved this ITR, including the conclusions and recommendations presented. The methodology followed by TES in performing this review and evaluation is described in Appendix B to this report.

ITR Reviewed and Approved
IDVP Program Manager
Teledyne Engineering Services

for D.C. Stratouly
Assistant Project Manager

STATUS REPORT

1.0 INTRODUCTION

Stone & Webster Engineering Corporation (SWEC) was engaged by Teledyne Engineering Services (TES) to perform evaluations and verifications of the quality related activities of Wismer & Becker (W&B) who performed installation of NSSS piping, and G. F. Atkinson (GFA) who performed civil/structural work in the containment building at the Diablo Canyon Nuclear Power Plant (DCNPP) Unit #1.

SWEC has performed the evaluation and verification in accordance with the Independent Design Verification Program (IDVP), Program Plan, Revision 1, Adjunct Program for Evaluation of Construction Quality Assurance, dated October 1, 1982, issued by Teledyne Engineering Services (TES) as IDVP Program Manager.

This report concentrates on the work performed by W&B which consisted primarily of (1) final setting of the major NSSS components (reactor vessel, steam generators, etc.), and (2) installation of the reactor coolant piping, pressurizer surge line piping, bottom mounted instrumentation (BMI) tubing, piping and tubing supports, and reactor vessel flange seal leak detection tubing. A separate report has been issued with respect to GFA.

The review was conducted at the site from September 28, 1982, through November 5, 1982, according to the objectives of the evaluation defined in Section 2.0, Paragraph 2.1 of the IDVP Plan. The subsequent evaluation was structured to assess whether the construction of the DCNPP was performed in accordance with quality requirements appropriate for the time of plant construction.

The Quality Assurance Program Evaluation was performed by a team of engineers experienced in various aspects of nuclear power plant construction quality assurance and inspection and was led by a Senior Field Quality Control Representative.

The Quality Assurance Program Evaluation was performed by individuals certified as Auditors by SWEC in accordance with approved procedures and ANSI-N45.2.23. The construction verification was performed by individuals certified as Inspectors in the appropriate discipline by SWEC in accordance with approved procedures and ANSI-N45.2.6.

The review started with an evaluation to determine if the construction documentation provided evidence that the construction work correctly incorporated essential design features. To ascertain this, the areas of W&B's responsibilities were physically verified for compliance to PG&E Specifiction 8752, the W&B QA/QC Manual, and applicable drawings.

2.0 CONSTRUCTION QUALITY ASSURANCE EVALUATION

An appropriate sample for evaluation was selected from the work of this contractor to provide evidence of his quality practices in each area of activity.

2.1 DEFINITION OF ITEMS REVIEWED

2.1.1 Evaluation of Construction Quality Assurance Program

Task A: Review of contractor's quality programs to determine if adequate controls and practices were evident to assure the quality of construction and the incorporation of essential design features into the completed plant, and if controls were consistent with applicable regulatory requirements at the time the

work was performed.

2.1.2 Verification of Physical Installation

Task B: To evaluate if physical installation of selected components of safety systems and structures conform to the requirements of design drawings and specifications and that required inspections were performed.

2.2 DESCRIPTION OF REVIEW

2.2.1 Evaluation of Construction Quality Assurance Program

The evaluation was conducted using a prepared checklist, consisting of 82 attributes, which were derived from requirements contained in the following documents:

- PG&E Specification 8752, "Installation of the Nuclear Steam Supply Systems for Units 1 and 2 - Diablo Canyon Site", May 3, 1972.
- Wismer and Becker QA/QC Manual, June 6, 1973.
- Applicable drawings

Records obtained from the permanent plant file were reviewed, on a random basis, for objective evidence that requirements were met in a satisfactory manner. The type of records reviewed included ASME III Certificates of Authorization, Certified Material Test Reports (CMTRs), Code Data Reports, Operation Process Sheet Travelers (installation and inspection documentation), drawings, welding procedures, welder qualification records, weld data sheets, welding electrode control records, nondestructive examination

(NDE) procedures, personnel qualifications and reports, hydrostatic test procedures reports, audit reports, and nonconformance reports (NCRs).

2.2.2 Verification of Physical Installation

Checklists were prepared based on design drawings, specification requirements, reported as-built conditions, and other appropriate design data (i.e., flow diagrams), for conducting the physical verification of construction practices of the following systems:

A. Reactor coolant piping
B. Pressurizer surge line piping
C. Bottom mounted instrumentation tubing
D. Reactor vessel leak detection line
E. Pipe and tubing supports for items A, B, C, and D above

Inspections were performed utilizing prepared checklists consisting of 53 pre-selected attributes extracted from specifications, drawings and quality assurance/quality control procedures.

All accessible welds in systems described above were visually examined to verify that fabrication, examination and documentation were performed to approved procedures. All insulation was removed for the inspection.

Each piping system was examined by individual spool and welds. Welds were visually examined for evidence of undercut, slag, porosity, weld profile, weld identification, radiographic markers and welder's symbol.

Piping was verified against PG&E drawings and W&B fabrication records. The W&B Quality Assurance Manual, PG&E drawings, Southwest Fabricating and Welding Company drawings, Westinghouse (W) drawings, and ASME and ANSI codes and standards were referred to as necessary.

Welding was verified utilizing W&B weld procedures (approved by PG&E), W&B fabrication records, welder qualification records and weld rod issue records. Radiograph interpretation sheets were examined, but no film was reviewed as part of the physical verification.

Reactor coolant piping weld records consisted of fabrication processes sheets broken down by loop, weld, and quadrant (4 loops, 8 welds per loop, 4 quadrants per weld) and included documentation of preheat, interpass temperatures, ferrite content, filler material, current and voltage used during welding, visual inspection results, NDE reports, and PG&E representative sign-off at pre-selected hold points.

Weld maps included in the documentation packages indicated welders assigned to each weld or part of weld, a record of arc strike repairs and lug removal. NDE records were also part of the weld documentation package.

The records were reviewed to determine whether the results recorded were in accordance with program and procedure requirements.

An inspection of internal surfaces of reactor coolant piping was one attribute on the checklist. Due to

clean conditions restrictions in the reactor cavity area and the vessel being partly flooded, it was only possible to perform internal inspection of the hot and cold legs of loop 3.

Internal surfaces of pipe and welds on loop 3 were visually inspected for cleanliness, surface condition, weld spatter, arc strikes, weld profile, undercut, correct reinforcement, correct grinding, porosity, slag and correct root preparation.

BMI tubing records consisted of 2 packages which contained the documentation of all 350 welds. These records were examined for evidence of correct documentation of:

- Correct weld identification
- Assignment of qualified welder
- Correct preheat
- Correct electrical characteristics
- Visual inspections
- NDE
- Repair data

Since the Reactor Vessel was partly flooded and subject to restricted access due to cleanliness restrictions, the reactor vessel leak detection system could not be completely physically examined. The accessible portion was verified using PG&E drawings for orientation, identification, location, piping configuration and correct material.

Supports in each system were visually examined for weld quality, and that location, orientation and installation conformed to specification and drawing requirements.

PG&E and Westinghouse drawings, W&B weld procedures, weld rod issue records and W&B fabrication process sheets were reviewed.

Welds or supports were examined for evidence of slag, porosity, undercut, weld spatter and correct weld profile.

All bolts were examined for correct material identification, location, orientation, bolt and nut seating and thread engagement.

Support components were examined for evidence of correct identification, location, orientation, fabrication, installation and repair records.

Steam generator snubbers were examined to determine if location and orientation agreed with PG&E drawings. Pin to pin measurements were recorded for all 16 snubbers, and any deviations from PG&E drawings were noted.

Visual inspections were performed using PG&E drawings to verify that components, i.e., reactor vessel, steam generators, pressurizer, etc., were correctly identified and properly oriented.

In conjunction with the physical verification, supporting documentation, i.e., welder qualification, weld procedure approvals, NDE qualifications and other inspection reports, were reviewed for compliance to specification and program requirements for the time of construction.

2.3 SUMMARY OF REVIEW RESULTS

2.3.1 Evaluation of Construction Quality Assurance Program

It was found that Wismer and Becker was in compliance with requirements for sixty-five of eighty attributes that were evaluated (two attributes were determined to be not applicable during the course of the evaluation). In accordance with specification requirements, the contractor's Quality Assurance program was submitted to and approved by PG&E. In addition, the contractor was a holder of the ASME, Section III, Certification of Authorization for installation of nuclear piping. The required Code Data Reports were properly signed and certified by the Authorized Nuclear Inspector (ANI). Travelers, specifications, drawings and procedures were approved by PG&E prior to work being performed; the travelers, which included inspection and test requirements, were completed as work was performed including the signoff at designated hold points by the contractor's inspector and the ANI. Further examples of activities which were found to be in compliance with the source documents and associated codes and standards are as follows:

- Installation operations (setting, shimming, alignment, etc.) of NSSS major components

- Cleanliness, and cleaning and flushing operations in accordance with procedures approved by PG&E

- Qualification of welding procedures and approval by PG&E and the ANI

- Selection of proper welding process (GTAW, SMAW)
- Control of welding electrodes
- Control of interpass temperatures
- Repair of reported weld defectcts in accordance with procedures approved by PG&E
- Approval of NDE procedures and NDE personnel qualifications by PG&E and the ANI
- Performance of required NDE
- Performance of audits
- Control of reported nonconformances, including the approval of dispositions by PG&E

A total of 3528 documents were reviewed. As a result of the review, 16 Open Item Reports were issued to document findings which required resolution. Most of these items can be characterized as omissions or as an inspection activity which had to be evaluated to determine its impact on the physical installation.

2.3.2 Verification of Physical Installation

It was found that W&B was in compliance with program requirements for the majority of the attributes that were verified. The configuration, cleanliness, surface finish of welds, and overall workmanship was in compliance with drawings and specifications with some exceptions noted in the report. Of 2298 items inspected, 9 Open Item Reports were issued. The items

identified primarily demonstrate either a conflict between a drawing requirements and the installation or apparent field changes that may not have been properly documented.

2.4 EOI REPORTS ISSUED

Twenty-five (25) EOI Files were opened for the Construction Quality Assurance evaluation of the work performed by Wismer & Becker on NSSS piping at the Diablo Canyon Nuclear Power Plant - Unit 1. The status of these files is summarized in Appendix A.

EOI 9001 was issued because the majority of welds on supports 9, 10, and 11 (PG&E drawings 443247 and 443248) exhibited incomplete fillet, short weld length, undercut weld, spatter, arc strikes, slag and poor workmanship. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9002 was issued because the geometry of the welds covering BMI System supports did not comply with the requirements as shown in PG&E drawing 443248. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9003 was issued because the geometry of the welds covering BMI tubing did not comply with the requirements of Westing-

house drawing W 685J702 and Wismer & Becker weld procedure 3500-2. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9004 was issued because Certified Material Test Reports (CMTR) did not comply with the requirements specified in Westinghouse drawing No. 685J702 revision 4. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9005 was issued because welding procedures apparently did not comply with specification 8752 requirements. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as a Program Resolution Report, Closed Item (Invalid) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9006 was issued because CMTRs did not comply with specification 8752 requirements. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9007 was issued because the geometry of the welds covering BMI systems did not comply with the requirements as shown in Westinghouse drawing W 685J702. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9009 was issued because weld radiographics apparently did not comply with the requirements of Westinghouse drawing 685J702. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as a Program Resolution Report, Closed Item (Invalid) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9010 was issued because records of weld procedures apparently did not show compliance with the requirements of specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as a Program Resolution Report, Closed Item (Invalid) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9011 was issued because the welding records did not show compliance with the requirements of specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No

physical modifications were required. An IDVP Completion Report has been issued.

EOI 9012 was issued because deficiencies were found in the welding procedures required by specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9013 was issued because of various discrepancies between installation and drawing requirements. This file was reviewed and analyzed with the additional information provide by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9014 was issued because of apparent lack of documentation certifying the halogen content as required by specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as a Program Resolution Report, Closed Item (Invalid) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9017 was issued because bolt material requirements as per drawing 438271 were not met. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved an an Error Class C (observation) in accordance with the program plan. No

physical modifications were required. An IDVP Completion Report has been issued.

EOI 9018 was issued because manufacturer's record of welder performance did not meet ASME IX requirements. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved an an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9019 was issued because welding procedures did not comply and analyzed with specification 8752 requirements. This file was reviewed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9020 was issued because records of radiographic inspection may be inaccurate. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9022 was issued because voltage/amperage requirements of weld procedure 3500-2 were not met. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion

report has been issued.

EOI 9023 was issued because voltage/amperage requirements of weld procedure 3500-1 were not met. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9024 was issued because ferrite readings for welds were not recorded as required. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9025 was issued because drilled holes on one tubing support did not appear on engineering drawings. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modification were required. An IDVP Completion Report has been issued.

EOI 9026 was issued because there are no records of non-destructive examination performed on the areas of removal of some temporary attachments to RCS piping. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee initially determined that this file was an Error A (Finding). PG&E has submitted a Completion Report, and TES has issued an Open Item Report requesting that the Findings Review Committee review the PG&E

Completion Report. This report will be revised when this file is resolved.

EOI 9027 was issued because there were no records of non-destructive examination performed on tube to seal table welds as required by specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9028 was issued because weld documentation apparently did not identify welder to specific welds as required by specification 8752. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as a Program Resolution Report, Closed Item (Invalid) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

EOI 9029 was issued because of several instances of arc strikes, weld spatter, rusting, pitting, overgrinding, and paint spatter on RCS loops and surge lines. This file was reviewed and analyzed with the additional information provided by PG&E. The Findings Review Committee has recommended and the IDVP concluded that the file is resolved as an Error Class C (observation) in accordance with the program plan. No physical modifications were required. An IDVP Completion Report has been issued.

2.5 EVALUATION OF REVIEW RESULTS

2.5.1 Evaluation of Construction Quality Assurance Program

The documentation reviewed indicates that the contractor performed his work to be in compliance with PG&E specification 8752, approved Quality Assurance Manual and applicable drawings.

As a result of the documentation reviewed during this evaluation and based on the Quality Assurance Program for construction of the NSSS piping systems and supports which is judged to be adequate, it is concluded that the work was performed to meet the applicable standards for the time of plant construction with the exception of the concern raised in EOI File 9026 which is being analyzed.

2.5.2 Verification of Physical Installation

Results of the physical verification indicated that the contractor did comply with the design criteria of PG&E specification 8752, applicable drawings and their Quality Assurance Manual and, to the extent verified, resulted in adequate installation of the Reactor Coolant System.

2.6 CONCLUSION

The Review Team considers that, in the areas reviewed, the controls and practices in place during construction were adequate to assure the quality of construction. Further, to the extent reviewed, the as-constructed physical installation conforms to the requirements of design drawings and specifications, and the required inspections were performed and appropriately documented. Final conclusions and the determination as to the need for additional verification is subject to the resolution of EOI File 9026.

APPENDIX A

DCNPP IDVP STATUS REPORT

	REV. 0	LATEST REV.			ACTION	
FILE NO.	DATE	REV.	DATE	BY	STATUS	MODS?	SUBJECT
9001	821102	0	821102	SWEC	OIR		WORKMANSHIP ON WELDS ON BMI SUPPORTS
9001	821102	1	830211	SWEC	PER/C		WORKMANSHIP ON WELDS ON BMI SUPPORTS
9001	821102	2	830222	TES	ER/C		WORKMANSHIP ON WELDS ON BMI SUPPORTS
9001	821102	3	830222	TES	CR	NO	WORKMANSHIP ON WELDS ON BMI SUPPORTS
9002	821102	0	821102	SWEC	OIR		WELD LENGTHS ON BMI SUPPORTS
9002	821102	1	830204	SWEC	PER/C		WELD LENGTHS ON BMI SUPPORTS
9002	821102	2	830209	TES	ER/C		WELD LENGTHS ON BMI SUPPORTS
9002	821102	3	830209	TES	CR	NO	WELD LENGTHS ON BMI SUPPORTS
9003	821102	0	821102	SWEC	OIR		BOTTOM MOUNTED INSTRUMENT TUBING
9003	821102	1	830112	SWEC	PER/C		BOTTOM MOUNTED INSTRUMENT TUBING
9003	821102	2	830117	TES	ER/C		BOTTOM MOUNTED INSTRUMENT TUBING
9003	821102	3	830117	TES	CR	NO	BOTTOM MOUNTED INSTRUMENT TUBING
9004	821102	0	821102	SWEC	OIR		UT INSPECTION OF BMI TUBES
9004	821102	1	830112	SWEC	PER/C		UT INSPECTION OF BMI TUBES
9004	821102	2	830117	TES	ER/C		UT INSPECTION OF BMI TUBES
9004	821102	3	830117	TES	CR	NO	UT INSPECTION OF BMI TUBES
9005	821102	0	821102	SWEC	OIR		REACTOR COOLANT WELD PROCEDURES
9005	821102	1	830112	SWEC	PPRR/CI		REACTOR COOLANT WELD PROCEDURES
9005	821102	2	830117	TES	PRR/CI		REACTOR COOLANT WELD PROCEDURES
9005	821102	3	830117	TES	CR	NO	REACTOR COOLANT WELD PROCEDURES
9006	821102	0	821102	SWEC	OIR		SEAL LEAK DETECTION TUBING
9006	821102	1	830211	SWEC	PER/C		SEAL LEAK DETECTION TUBING
9006	821102	2	830222	TES	ER/C		SEAL LEAK DETECTION TUBING
9006	821102	3	830222	TES	CR	NO	SEAL LEAK DETECTION TUBING
9007	821102	0	821102	SWEC	OIR		BMI COUPLINGS
9007	821102	1	830225	SWEC	PER/C		BMI COUPLINGS
9007	821102	2	830226	TES	ER/C		BMI COUPLINGS
9007	821102	3	830226	TES	CR	NO	BMI COUPLINGS
9009	821102	0	821102	SWEC	OIR		RADIOGRAPH-REACTOR COOLANT SYS.(THIMBLE GUIDE TUBES
9009	821102	1	830112	SWEC	PPRR/CI		RADIOGRAPH-REACTOR COOLANT SYS.(THIMBLE GUIDE TUBES
9009	821102	2	830117	TES	PRR/CI		RADIOGRAPH-REACTOR COOLANT SYS.(THIMBLE GUIDE TUBES
9009	821102	3	830117	TES	CR	NO	RADIOGRAPH-REACTOR COOLANT SYS.(THIMBLE GUIDE TUBES
9010	821102	0	821102	SWEC	OIR		WELDING PROCEDURES-REACTOR COOLANT SYSTEM
9010	821102	1	830112	SWEC	PPRR/CI		WELDING PROCEDURES-REACTOR COOLANT SYSTEM
9010	821102	2	830117	TES	PRR/CI		WELDING PROCEDURES-REACTOR COOLANT SYSTEM
9010	821102	3	830117	TES	CR	NO	WELDING PROCEDURES-REACTOR COOLANT SYSTEM
9011	821102	0	821102	SWEC	OIR		NSSS-PIPING TRAVELER REVIEW
9011	821102	1	830112	SWEC	PER/C		NSSS-PIPING TRAVELER REVIEW
9011	821102	2	830117	TES	ER/C		NSSS-PIPING TRAVELER REVIEW
9011	821102	3	830117	TES	CR	NO	NSSS-PIPING TRAVELER REVIEW
9012	821102	0	821102	SWEC	OIR		NSSS-WELD PROCEDURES
9012	821102	1	830112	SWEC	PER/C		NSSS-WELD PROCEDURES
9012	821102	2	830117	TES	ER/C		NSSS-WELD PROCEDURES
9012	821102	3	830117	TES	CR	NO	NSSS-WELD PROCEDURES
9013	821102	0	821102	SWEC	OIR		INSTALLATION OF BMI SUPPORTS
9013	821102	1	830211	SWEC	PER/C		INSTALLATION OF BMI SUPPORTS
9013	821102	2	830222	TES	ER/C		INSTALLATION OF BMI SUPPORTS
9013	821102	3	830222	TES	CR	NO	INSTALLATION OF BMI SUPPORTS
9014	821102	0	821102	SWEC	OIR		HALOGEN CONTENT-REACTOR COOLANT PIPING WELDING
9014	821102	1	830112	SWEC	PPRR/CI		HALOGEN CONTENT-REACTOR COOLANT PIPING WELDING

APPENDIX A

DCNPP IDVP STATUS REPORT

	REV. 0	LATEST REV.				ACTION	
FILE NO.	DATE	REV.	DATE	BY	STATUS	MODS	SUBJECT
9014	821102	2	830117	TES	PRR/CI		HALOGEN CONTENT-REACTOR COOLANT PIPING WELDING
9014	821102	3	830117	TES	CR	NO	HALOGEN CONTENT-REACTOR COOLANT PIPING WELDING
9017	821102	0	821102	SWEC	OIR		BOLT MATERIAL - REACTOR COOLANT SYSTEM
9017	821102	1	830112	SWEC	PER/C		BOLT MATERIAL - REACTOR COOLANT SYSTEM
9017	821102	2	830117	TES	ER/C		BOLT MATERIAL - REACTOR COOLANT SYSTEM
9017	821102	3	830117	TES	CR	NO	BOLT MATERIAL - REACTOR COOLANT SYSTEM
9018	821102	0	821102	SWEC	OIR		WELDER'S QUALIFICATION
9018	821102	1	830112	SWEC	PER/C		WELDER'S QUALIFICATION
9018	821102	2	830117	TES	ER/C		WELDER'S QUALIFICATION
9018	821102	3	830117	TES	CR	NO	WELDER'S QUALIFICATION
9019	821102	0	821102	SWEC	OIR		OPERATION DESCRIPTION FOR WELDS
9019	821102	1	830218	SWEC	PER/C		OPERATION DESCRIPTION FOR WELDS
9019	821102	2	830225	TES	ER/C		OPERATION DESCRIPTION FOR WELDS
9019	821102	3	830225	TES	CR	NO	OPERATION DESCRIPTION FOR WELDS
9020	821102	0	821102	SWEC	OIR		RADIOGRAPHIC INSPECTION REPORT INFORMATION
9020	821102	1	830112	SWEC	PER/C		RADIOGRAPHIC INSPECTION REPORT INFORMATION
9020	821102	2	830117	TES	ER/C		RADIOGRAPHIC INSPECTION REPORT INFORMATION
9020	821102	3	830117	TES	CR	NO	RADIOGRAPHIC INSPECTION REPORT INFORMATION
9022	821110	0	821110	SWEC	OIR		WELD PROCEDURE-BMI TUBING
9022	821110	1	830204	SWEC	PER/C		WELD PROCEDURE-BMI TUBING
9022	821110	2	830210	TES	ER/C		WELD PROCEDURE-BMI TUBING
9022	821110	3	830210	TES	CR	NO	WELD PROCEDURE-BMI TUBING
9023	821110	0	821110	SWEC	OIR		WELD PROCEDURE-REACTOR COOLANT SYSTEM
9023	821110	1	830112	SWEC	PER/C		WELD PROCEDURE-REACTOR COOLANT SYSTEM
9023	821110	2	830117	TES	ER/C		WELD PROCEDURE-REACTOR COOLANT SYSTEM
9023	821110	3	830117	TES	CR	NO	WELD PROCEDURE-REACTOR COOLANT SYSTEM
9024	821110	0	821110	SWEC	OIR		FERRITE READINGS-REACTOR COOLANT SYSTEM
9024	821110	1	830211	SWEC	PER/C		FERRITE READINGS-REACTOR COOLANT SYSTEM
9024	821110	2	830222	TES	ER/C		FERRITE READINGS-REACTOR COOLANT SYSTEM
9024	821110	3	830222	TES	CR	NO	FERRITE READINGS-REACTOR COOLANT SYSTEM
9025	821110	0	821110	SWEC	OIR		BMI TUBING SUPPORTS
9025	821110	1	830204	SWEC	PER/C		BMI TUBING SUPPORTS
9025	821110	2	830211	TES	ER/C		BMI TUBING SUPPORTS
9025	821110	3	830211	TES	CR	NO	BMI TUBING SUPPORTS
9026	821110	0	821110	SWEC	OIR		ATTACHMENTS-REACTOR COOLANT SYSTEM PIPING
9026	821110	1	830211	SWEC	PER/A		ATTACHMENTS-REACTOR COOLANT SYSTEM PIPING
9026	821110	2	830222	TES	ER/A		ATTACHMENTS-REACTOR COOLANT SYSTEM PIPING
9026	821110	3	830225	TES	OIR		ATTACHMENTS-REACTOR COOLANT SYSTEM PIPING
9027	821110	0	821110	SWEC	OIR		WELDS-BMI TUBING
9027	821110	1	830112	SWEC	PER/C		WELDS-BMI TUBING
9027	821110	2	830117	TES	ER/C		WELDS-BMI TUBING
9027	821110	3	830117	TES	CR	NO	WELDS-BMI TUBING
9028	821119	0	821119	SWEC	OIR		WELD DOCUMENTATION - BMI SUPPORTS
9028	821119	1	830112	SWEC	PPRR/CI		WELD DOCUMENTATION - BMI SUPPORTS
9028	821119	2	830117	TES	PRR/CI		WELD DOCUMENTATION - BMI SUPPORTS
9028	821119	3	830117	TES	CR	NO	WELD DOCUMENTATION - BMI SUPPORTS
9029	821119	0	821119	SWEC	OIR		REACTOR COOLANT SYSTEM - WELD DEFICIENCIES
9029	821119	1	830218	SWEC	PER/C		REACTOR COOLANT SYSTEM - WELD DEFICIENCIES
9029	821119	2	830225	TES	ER/C		REACTOR COOLANT SYSTEM - WELD DEFICIENCIES
9029	821119	3	830225	TES	CR	NO	REACTOR COOLANT SYSTEM - WELD DEFICIENCIES

APPENDIX B

PROGRAM MANAGER'S ASSESSMENT

Independent review by TES of the tasks considered to evaluate the Construction Quality Assurance of the work performed by Wismer & Becker on the Installation of NSSS Piping at Diablo Canyon Nuclear Power Plant - Unit 1, was performed in accordance with IDVP Program Plan, Revision 1, Adjunct Program for Evaluation of Construction Quality Assurance dated October 1, 1982.

The review involved a visit to the site to comment on the procedures and checklists drafted by SWEC's engineers and an analysis of the recommendations by the Findings Review Committee.

The files issued by SWEC were reviewed thoroughly and specific recommendations were made to the IDVP Program Manager delineating appropriate resolution.

As a result of the verification of the selected samples conducted to date, (with the exception of EOI 9026, which is presently undergoing review of PG&E information by the Findings Review Committee), and the assessment of the impact of SWEC's findings, TES, as Program Manager, is of the opinion that no additional verification is required.