ORGANIZATION: TRANSAMERICA DELAVAL, INC.
ENGINE AND COMPRESSOR DIVISION
OAKLAND, CALIFORNIA

REPORT NO.: 99900334/85-01	INSPECTION DATE(S): June 3-7, 1985	INSPECTION ON-SITE HOURS: 55

CORRESPONDENCE ADDRESS: Transamerica Delaval, Incorporated
Engine and Compressor Division
ATTN: Mr. C. S. Mathews, Vice President and
General Manager
550 85th Avenue
Oakland, California 94261

ORGANIZATIONAL CONTACT: Mr. B. Guntrum, Manager, Quality Assurance
TELEPHONE NUMBER: (415) 577-7422

PRINCIPAL PRODUCT: Diesel Engines

NUCLEAR INDUSTRY ACTIVITY: With the exception of an occasional replacement part or service, no current domestic nuclear industry activity.

ASSIGNED INSPECTOR: _____ 18 Oct 85
E. H. Trottier, Reactive Inspection Section (RIS) Date

OTHER INSPECTOR(S): J. C. Higgins, Nuclear Engineer
Brookhaven National Laboratory

APPROVED BY: E. T. Baker for _____ 10/18/85
E. W. Merschoff, Chief, RIS Date

INSPECTION BASES AND SCOPE:

A. BASES: 10 CFR 50 Appendix B and 10 CFR Part 21.

B. SCOPE: This inspection was performed to review corrective action taken by TDI on previous inspection findings. The specific area of concern that gave rise to this inspection relates to the manner in which TDI reports defects and noncompliances as required by 10 CFR Part 21.

PLANT SITE APPLICABILITY: Beliefonte 1/2, 50-438, 439; Catawba 1/2, 50-413, 414; Comanche Peak 1/2, 50-445, 446; Grand Gulf 1/2, 50-416, 417; Perry 1/2, 50-440,441; Rancho Seco, 50-312; River Bend, 50-458; San Onofre 1, 50-206; Shearon Harris, 50-400; Shoreham, 50-322; Vogtle 1/2, 50-424,425.

A. INSPECTION ISSUES

The issues that resulted in this inspection were: (1) verifying satisfactory corrective and preventive actions for the 29 nonconformances and two violations resulting from three inspections of Transamerica Delaval Inc. conducted in 1983, and (2) verifying that Transamerica Delaval, Inc. has established and implemented an effective 10 CFR Part 21 program.

B. INSPECTION FINDINGS

1. Contrary to Criterion V of Appendix B to 10 CFR Part 50, Section 10.4.1 of the Quality Assurance Manual and Section 2.4.1 of In-process Inspection Manual I.P. 300, a production route sheet was neither stamped nor initialled by a quality inspector to indicate acceptance of a production operation.

2. Transamerica Delaval, Inc. has established a 10 CFR Part 21 program that is, with few exceptions, effectively implemented. Areas in need of improvement are: the Part 21 administrative procedures, and records of review and evaluation activities conducted in support of the Part 21 program.

3. Corrective actions and measures to prevent recurrence for the 31 violations and nonconformances identified in previous inspections were, with the following exceptions, verified satisfactory:

   Inspection 83-03: Nonconformance A remains unresolved, and Nonconformance E remains an open item.

C. BACKGROUND

Inspection topics for review within TDI's overall Part 21 program included: required posting of Part 21 and related documents; the TDI procedure for establishing and administering Part 21 issues; procurement and subvendor control; and records related to Part 21 items. A discussion of the results of the review of TDI's Part 21 program is found in Section F, Other Findings or Comments.

The general area of interest for this inspection was a review of the corrective and preventive measures implemented as a result of previous inspection findings. Transamerica Delaval, Inc., has been visited by NRC inspectors six times since 1979, with three inspections occurring within four months in 1983 (83-01 in July, 83-02 in September and 83-03 in October). The series of inspections conducted in 1983 resulted in 2

violations and 29 nonconformances. This inspection addressed each of the 31 items of violation and nonconformance arising from the 1983 Vendor Program Branch inspections of Transamerica Delaval, Inc. The results are contained in Section F, Status of Previous Inspection Findings.

D. UNRESOLVED ITEMS:

Unresolved items are matters about which more information is required. The unresolved item arising from this inspection was initially identified as Nonconformance A, Inspection 83-03. As discussed below, corrective and preventive actions were insufficiently comprehensive to allow fully satisfactory resolution.

1. Nonconformance A (Unresolved) Inspection 83-03:

TDI procurement specification for electrical control cables required only commercial grade cable, and did not require conformance to IEEE standards that require class IE cable be used on emergency diesel generators.

As a result of the use of commercial grade cable vice Class 1E cable on their diesel generators, a TDI Service Information Memo (#361, Rev. 1, dated 10/13/83) and a 10 CFR 21 Report (dated 9/27/83) were issued to notify the NRC and all affected customers. By way of corrective action, TDI has changed its parts list and purchased material specification to specify Class 1E cable. An internal QA audit was performed in April, 1984 to address the generic aspects of design control errors. With the exception of this application of Class 1E cable, no other design control discrepancies were identified as a result of that audit. The following paragraph substantiates insufficient corrective action taken to correct this nonconformance in its entirety.

The multi-conductor, commercial grade cable running from the engine terminal box to the Woodward governor actuator was previously rated for 75° C. Because the cable runs so close to the engine, it was determined that the cable would exceed this rating if diesel room ambient temperature rose above 98.5° F (37° C). The new Class 1E cable is rated at 90° C. A straight line extrapolation would predict that this rating would be exceeded if room ambient temperature rises above 125.5° F (52° C). At least one nuclear power plant diesel room requires equipment be rated to withstand 130°F (ambient) due to ventilation system capacity. Thus, the new Class 1E cable temperature rating will be exceeded under that circumstance. Further review, analysis, testing or modification of this cable by TDI is appropriate.

E. 10 CFR PART 21 REVIEW

The TDI Program for reporting defects and noncompliances in accordance with 10 CFR Part 21 was reviewed including: the Part 21 procedure, posting of required documents and records related to Part 21 activities. Various persons were interviewed regarding their role and responsibility with respect to the identification of defects for reporting under Part 21. Overall, TDI appears to be conscientiously reviewing failures and defects for reportability under Part 21. Areas warranting improvement are discussed below:

a. Posting

Both Part 21 and Section 206 of the Energy Reorganization Act were prominently posted throughout the facility. However, the TDI Part 21 procedure was not posted. TDI corrected this by posting their procedure during the week of the inspection.

b. Procedure

The TDI procedure describing the Part 21 process is titled "Division 10 CFR 21 Policy," revision dated 5/31/85. The inspector reviewed both the current and previous revision (dated 1/26/81) of the Part 21 procedure.

Defects or failures in TDI equipment are identified through a number of means including: verbal and written reports from field service representatives, warranty service orders, returned material reports, and QC inspection reports. Items identified from these or other sources that are potentially reportable under Part 21 are evaluated by TDI, primarily via the Delivered Product Quality (DPQ) Committee.

The TDI Part 21 procedure is quite general and does not discuss specific responsibility for review of the various source reports for possible escalation into the Part 21 review system. Likewise, there are no details in specific implementing procedures for these source reports that discuss responsibility for consideration of Part 21 in their review.

Several recent TDI purchase orders for nuclear parts were reviewed. It was noted that while TDI imposed Part 21 on its subvendors, TDI was unable to produce a purchasing procedure or policy that mandated this practice.

Records maintained by TDI to assure compliance with Part 21 were marginal, particularly for items that were potentially reportable, but were evaluated by TDI and determined to be not reportable. The TDI Part 21 procedure provided no detail or guidance on the evaluation records to be kept in this situation.

c. Review of Part 21 Files

Selected items from TDI Part 21 files were reviewed, including failures that were ultimately determined reportable, as well as those that were determined to be not significant enough for reportability. Additionally, significant failures and defects were selected from other TDI data systems and from non-TDI data banks. These were pursued and the inspector verified that they had been appropriately entered into the TDI Part 21 system for review and evaluation.

TDI items determined reportable are numbered sequentially, beginning with 101. Since beginning their Part 21 reporting program in 1978, TDI has reported 430 items. The files of the four items reported to date in 1985 were reviewed as follows:

Item 127: Air Filter, Control Panel Failure
Item 128: Starting Air Check Valve Failure
Item 129: Crankshaft Oil Plug Sizing
Item 130: Generator Control Panel Overheating

These files were reviewed for proper Part 21 evaluation, correct documentation, notification of affected plants, timeliness of reporting, and proper items included in the reports. No discrepancies were identified.

Records for items not reported under Part 21 were also reviewed. In general, records of failures that were originally considered reportable, then by later evaluation determined to be not reportable, were marginal. The Part 21 procedure did not address the evaluation format. Thus, the record of an evaluation was often a set of handwritten notes not always dated and signed. Despite the lack of good records, TDI did appear to be performing appropriate reviews of these items. Particularly noteworthy were the weekly inputs from each field service representative and the Warranty Service Orders that were reviewed for potentially reportable items.

One item was identified that may deserve further attention. This concerned a Georgia Power Co. (Plant Vogtle) control system deficiency that prevented the EDGs from automatically restarting within 90 seconds of a shutdown. On 1/29/85, TDI determined this to be not reportable, without good reason and despite a customer letter identifying it as a serious discrepancy and requesting a modification to correct it. During the course of this inspection, TDI agreed to reevaluate this item.

In a telephone discussion of this item subsequent to the inspection, TDI informed the inspector that they had reviewed the matter and found plant Vogtle to be the only nuclear plant that had this 90 second "lockout." The TDI Engineering Department (Controls Group) has since redesigned this logic circuit and issued new drawings that remove this "lockout" feature.

F. QUALITY ASSURANCE PROGRAM REVIEW

Both 10 CFR 50, Appendix B, Criterion V and ANSI N45.2, Section 6, which TDI is committed to follow, call for activities affecting quality to be prescribed by appropriate instructions, procedures, and drawings. It was noted that the recently revised TDI Quality Assurance Program Manual, Section 5, "Instructions, Procedures, and Drawings," was weakly worded in that it only described manufacturing and engineering type documents. Further review of TDI programs and program controls revealed a general lack of procedural coverage in certain areas (e.g., Quality Assurance, Repair, and Parts Activities). Specifically, there did not appear to be controlled and approved procedures for the following activities:

- Completion of QC Inspection Reports
- Processing of Warranty Service Orders for failed items on EDGs in the field
- Processing of material and parts returned from the field for repair on Returned Material Request (RMR) forms
- The QA Corrective Action Request (CAR) Program

Review of the audit of TDI performed in 1984 by the Management Assistance Corporation (MAC) revealed a similar finding, as follows: "Instructions, Procedures, and Drawings in QAM Section 5.0 should cover the broad scope of documents intended by this section of ANSI N45.2 and not just drawings and manufacturing process related documents."

G. STATUS OF PREVIOUS INSPECTION FINDINGS:

1. Inspection 83-01 (July 11-15, 1983)

a. Violation 1 (Closed): Transamerica Delaval, Inc. (TDI) had failed to issue a 10 CFR Part 21 report concerning a jacket water pump failure Shoreham Nuclear Power Station that occurred on Octobe. 11, 1982.

Following the failure, TDI conducted (and documented) a review of the circumstances surrounding the incident. Based on this review, TDI concluded (erroneously) that the failure was not reportable under the requirements of 10 CFR Part 21 because the pump assembly was unique to Shoreham. (The inspector reviewed the documentation attendant to this Part 21 review).

TDI corrected this violation by issuing the required Part 21 report on July 20, 1983.

As preventive action, TDI committed to reexamine its Part 21 reporting philosophy and initiate administrative changes to ensure future problems similar to this will be reported.

b. Violation 2 (Closed): TDI had failed to issue a 10 CFR Part 21 report concerning fuel injection line leaks at Shoreham Nuclear Power Station.

Following the failure, TDI conducted a review of the circumstances and determined (erroneously) that since only Shoreham had experienced fuel injection line leaks, the problem was not in the tubing material supplied and thus was not reportable under 10 CFR Part 21. However, subsequent to Vendor Program Branch Inspection 83-01, TDI issued a Part 21 notification and identified two other nuclear sites that had received fuel injection line tubing from the same batch as Shoreham. TDI also recommended an inspection program to determine if additional fuel injection line failures were imminent. This recommendation resulted in Shoreham replacing 100% of the fuel injection lines on their engines. The remaining nuclear sites have experienced no failures of fuel injection line tubing to date.

Preventive action was taken in conjunction with Nonconformance A, Inspection 83-01, below: additional inspection and material tests performed on material received; training conducted and documented on QA Manual requirements for receipt inspections; additional emphasis in this area on the next QA internal audit.

c. Nonconformance A (Closed): Material (fuel injection line tubing) accepted without required mill test reports having been received or a nonconformance being issued.

TDI's corrective action commitment for this finding consisted of inspecting the subject fuel injection line tubing, which was received under vendor P. O. #45333. The inspector reviewed the nondestructive examination records of the tests performed on this tubing. The tests consisted of a 13 part metallurgical laboratory report and a magnetic particle test report. As a preventive measure, a new production routing sheet was developed that requires all tubing to undergo hardness, Magnaflux and metallurgical tests (by TDI Procedure NDE 600.30) upon receipt. The inspector reviewed the following tubing purchase orders and verified that the tests were documented as being performed:

TUBING P.O. Number	P.O. DATE
17558	5/2/84
55571	10/21/83
17873	5/22/84
18700	8/9/84
18947	8/30/84
19657	10/29/84
18479	7/16/84

Additional preventive action committed to by TDI and reviewed by the inspector included a letter from the QA Manager to the Quality Control Supervisor requiring documented training of receiving inspectors (dated November 4, 1983); the record of such training conducted (December 12, 1983); and the Audit Report of January 23, 1984, in which this area was a subject of the audit.

d. Nonconformance B (Closed): Layout drawings for a redesign of the jacket water pump not properly drawn, nor signed and dated.

The inspector reviewed TDI's corrective action commitment and found that Enterprise Standard (Form E 114) "Drawing Room Practice," Section II.A, Layouts, was revised 11/8/83 and now reads, "Marked prints may be used in lieu of a layout for minor redesign if the intent of the design can be clearly conveyed." Training records were also reviewed to verify preventive action. The inspector found a training commitment memo from the Design and Drafting Group Supervisor dated December 4, 1983 and a similar memo from the Supervisor of Design Engineers dated November 17, 1983. Training was conducted on this finding and the revision to "Drawing Room Practice," on January 3, 1984.

e. Nonconformance C (Closed): Calculations for the redesign of jacket water pump not properly signed, dated or placed in the proper notebook.

TDI's corrective action was reviewed. The subject calculations were checked, signed, dated and properly recorded on an engine calculation sheet by the Manager of Engineering on November 9, 1983. TDI's action to prevent recurrence was to conduct training on the Drafting Room Practice Procedure, including the requirements governing the Design Calculations Book. This training was conducted by the Manager of Design on November 17, 1983. The inspector reviewed the subject training documentation, which included the names of attendees (4).

f. Nonconformance D (Closed): "D Sheets", which are issued by the Engineering Department and pertain to the quality of the product, were not reviewed by the Department Manager.

To verify corrective action, the engineering release notices for the D Sheets that gave rise to this finding (D-4956 and D-4986) were reviewed. Each has been properly executed. For preventive action, Engineering Operations Procedure #9, "D Sheets (Engineering Information System)" was prepared and approved on January 13, 1984, and revised on October 12, 1984. Additional preventive action taken included a training session on D Sheets and the new procedure, which was held on January 16, 1984.

To verify effectiveness of preventive action implementation, the inspector reviewed all D Sheets from January 1 through September 26, 1984. All were properly executed, reviewed (checked) and approved. A summary of this review is presented below:

D SHEET No.	DESCRIPTION	DATE
4947	Revise capacity of fuel oil booster pump	01/19/84
4998	Cast Aluminum bearings	02/06-9/26/84
4999	High pressure fuel injection line (shielded not heated)	03/15/84
5000	Mill chart for fuel pump cam	03/19/84
5001	Fuel oil day tank procedures	03/28/84
5002	Magnetic particle procedure and standards	04/2/84
5003	Liquid particle procedure and standards	04/2/84
5004	Process for cladding babbitt alloy	04/27/84
5005	Magnetic particle procedure and standards (Replaced D-5002)	4/12/84

g. Nonconformance E (Closed): Route sheets for the assembly of a jacket water pump not retained by Quality Control.

No direct corrective action for this finding is possible, since the subject route sheets were never found. However, as the best available record of proper factory assembly, TDI obtained a copy of the Field Inspection Report that included acceptance criteria completed at Shoreham Nuclear Power Station on October 12, 1983. The Field Inspection Report is a Shoreham startup document (S/U Form 7.6, revision dated October, 1982) and was reviewed by the inspector.

Preventive action consisted of a training program for all TDI personnel whose jobs require use of route sheets. Training was conducted on December 13 (10 persons) and December 14, 1983 (3

persons). In addition, TDI committed to make this subject an item for the next internal audit performed. The inspector reviewed the results of the internal audit conducted June 8 and 11, 1984. A subject of this audit was Manufacturing In Process Control and Inspection (IP-300). All route sheets audited were properly stamped by a quality inspector.

h. Nonconformance F (Closed): Two route sheets associated with the modification of jacket water pumps were not properly stamped and dated.

The route sheet dated October 11, 1982 (jacket water pump shaft) was reviewed and found to be incorrectly stamped. Inspector 20 affixed his stamp in the space assigned to verify performance of operation 80, vice the space to signify inspection, space 90. To correct this finding, inspector 20 re-stamped the route sheet in Space 90 and added an explanatory notation on November 8, 1983. The route sheet dated November 14, 1977 (seal retainer rings) was corrected by entering the quantity accepted ("5"). Both route sheets were then stamped for final acceptance by Inspector 20 on November 8, 1983.

By way of preventive action, Inspector 20 attended the training session conducted on December 13, 1983, as referenced in Nonconformance E, above.

i. Nonconformance G (Withdrawn/Closed): Failure to conduct dynamic analysis or seismic testing of redesigned jacket water pumps.

The original design of the jacket water pump was seismically qualified by "shake" testing in accordance with the purchase specification and TDI engineering standards. The redesign of the jacket water pump performed in 1982 was analyzed for requalification in the "Water Pump Shaft and Impeller Torsion Analysis" performed on October 13, 1982. (This document was reviewed by the inspector). The analysis became a part of the "Qualification Statement for 03-425-04 Jacket Water Cooling Pump" dated October 18, 1982, which was also reviewed by the inspector. The analysis and attendant statement of seismic qualification reveal that the design change was minor and, in fact, improved the seismic capability of the jacket water pump. Thus, TDI did not deviate from its engineering procedures, because paragraph 15.4.6 of EOP-1 states, "It may be noted that any items or

assemblies, once qualified for one contract, need not be requalified for subsequent jobs provided the response spectra are of comparable levels." The above referenced qualification showed the response spectra to be of comparable levels.

Based on the information presented above, which was not reviewed at the time of the original inspection, this Nonconformance is hereby withdrawn.

j. Nonconformance H (Closed): A purchase material specification was not approved in accordance with TDI procedures.

TDI corrected this finding by properly approving the purchase material specification on November 11, 1983. To prevent recurrence, the Product Engineering Manager was advised of the requirements of the governing TDI procedure. Further, this item was made a subject of the internal audit conducted on April 5, 1984.

k. Nonconformance I (Closed): Failure to meet the date committed to for transmittal of 10 CFR Part 21 information to customers.

TDI committed to notify its customers regarding a potential problem with auxiliary drive couplings by July 15, 1982. However, the subject notification letters were dated August 18, 1982.

Thus, this Nonconformance was corrected by the mailing, albeit 34 days late, of the required Part 21 notification.

To prevent recurrence, TDI conducted and documented training on the requirements of 10 CFR Part 21 and made this a subject of the internal audit conducted in March, 1984. Further, TDI has revised its method of providing Part 21 letters to customers. This is now accomplished by sending each customer a copy of the 10 CFR Part 21 notification letter sent to the Nuclear Regulatory Commission. The inspector verified adequacy of this preventive action by reviewing all 10 CFR Part 21 reports (four) made by TDI in 1985. TDI has also established a "tickler" file to ensure that notification dates established in 10 CFR Part 21 reports are not exceeded.

2. Inspection 83-02 (September 6-15, 1983)

a. Nonconformance A (Withdrawn/Closed): TDI did not require its supplier of diesel generator exhaust silencers to have a Quality Assurance Program in effect for the components supplied to a nuclear power plant.

TDI's purchase order specifying four, Part #75051-12, 42 inch Model M-41 Exhaust Silencers was issued on 10/13/76 as P.O. #62643. The purchase order stated that the exhaust silencers were to be provided "In strict accordance with Attached Specification 75051-120, Revision B dated 8-17-76, and Appendices 1,2,6,7 and 8."

Appendix 6 to Specification 75051-120, Revision B is a 28 page document titled "Quality Assurance Requirements for J 75051 (Perry Nuclear Power Plants , Units 1 and 2)," and is dated 6-16-76. The purpose of Appendix 6 to Specification 75051-120, Revision B, is found on Page 3 and states, in part, "Establish QA and QC program requirements for procurement of items and manufacturing services...for Perry 1 and 2."

Based on the information presented above, which was not reviewed at the time of the original inspection, this Nonconformance is hereby withdrawn.

b. Nonconformance B (Closed): Inspection stamps and dates on route sheets did not provide proper evidence of inspection performance or acceptance. Corrective and preventive actions for the two examples cited are detailed below:

i. Corrective action for two missing cam gear bolts was accomplished when the engine was delivered to Shoreham Nuclear Power Station. (No reports of this problem have been received from other sites). The route sheet for the cam timing and bolting operations previously was revised to improve the clarity of the requirements for these operations. TDI also revised the QA Manual section that addresses subassembly and assembly inspections on March 15, 1984; held two, one hour training sessions on the requirements of inspection procedures; made this item a subject of the internal audit dated June 8 and 11, 1984. The inspector reviewed and verified the applicable revision date of the QA Manual and route sheet, the training session attendance sheet, and the subject audit report.

ii. Corrective action for this item is not possible, as the piston rework was accepted by the customer at TDI, and the pistons shipped and installed at Southern California Edison's San Onofre Nuclear Generating Station. The inspector reviewed the rework and shipping documents (Sales Order N-27693) and found that 3 pistons were shipped on March 5, 1982 (Certificate of Compliance 82-176 dated March 4, 1982 and signed by TDI's A. E. Nance), 10 pistons were released by SCE's W. R. Mayberry and shipped on March 27, 1982 (Certificate of Compliance 82-242 dated March 26, 1982 and signed by TDI's L. Block), and 10 pistons were released by W. R. Mayberry and shipped on March 31, 1982 (Certificate of Compliance 82-248 dated March 28, 1982 and signed by L. Block). Thus, documents associated with rework of the 23 pistons show all were inspected, accepted and documented as required.

As a result of this finding, TDI committed to revise their QA Manual in the section that addresses rework of customer property, conduct a training session on route sheets, and review route sheets for the six months following the training session. The inspector reviewed Section 2.2.3.1. of the QAM and found that it was revised on March 15, 1984 to read as follows, "Rework customer property or items returned from field for repair or rework will be handled same as newly manufactured parts." Training records for the class held on December 13 and 14, 1983 were reviewed, and the review of 47 completed route sheets in the six months following the training session was verified.

c. Nonconformance C (Closed): Rework operations and documentation for Shoreham and Grand Gulf diesel generator pistons were not properly controlled.

The correct number of pistons at issue in this finding is 59; 26 pistons from Shoreham and 33 from Grand Gulf. It appears that in Inspection Report 83-02, Grand Gulf pistons were counted twice (59 plus 33 equals 92, and 33 plus 33 equals 66). That would account for the totals given in the original Notice of Nonconformance (92 pistons reworked from Shoreham and Grand Gulf; 66 pistons reworked with no documentation). In any case, a search of records at TDI has failed to locate the 59 route sheets. Thus, corrective action for this finding is not possible.

Preventive action included revision of the QA Manual to better describe control of rework items, and a training program on the intent and importance of route sheet control. The inspector verified the revision of the QA Manual dealing with rework items (Section 2.3.3.1) is dated March 15, 1984 (See Nonconformance B, above). Section 16.2.1 of the QA Manual was reviewed and found to describe the review of route sheets prior to release to stores (for shipping or inventory). This revision to Section 16 of the QAM is dated June 7, 1984. The training program committed to by TDI was held on March 22, 1984. Eight attendees were present, including the supervisor of the Inspection Department. The training lasted one and one-half hours.

d. Nonconformance D (Closed): Jacket water pump analyses not reviewed and certified by a Registered Professional Engineer (RPE).

Corrective action for this finding was accomplished by revising the TDI engineering procedures that address the requirements for approval by an RPE. These procedures were reissued as Engineering Quality Procedures 5, 6 and 7. However, upon review by the inspector, these revised procedures still do not adequately define cases for which certification by an RPE is required. To remedy this remaining area of confusion, TDI has committed to provide a list of circumstances that will require certification of analyses/calculations by an RPE. It was also noted during this inspection that both the previous and current revision to the subject procedures require review and approval of calculations/analyses by the cognizant manager, and that the analyses in question had not been so approved. When brought to their attention by the inspector, TDI immediately had the items reviewed and approved by the Manager of Applied Mechanics.

Actions taken to prevent recurrence included making this item a subject of the audit performed on May 29, 1985 and having TDI engineering managers review and approve (by signature) all analyses between January, 1984 and this date. A sample of these analyses was reviewed during the inspection. No findings of nonconformance were identified.

e. Nonconformance E (Closed): Reports of nondestructive examinations performed on engine cylinder heads not initiated.

Corrective action for this finding is not possible since all combustion cylinder components have been shipped to the site and installed. However, other non-destructive examination records for the subject components were reviewed. Entries verified on the monthly "Casting and Machining Problems with RV-4 Steel Cylinder Heads" report show that magnetic particle examination was performed and indications repaired.

A summary of this report follows:

Head Serial No.	Repair Summary
G-83	5 hot tears comb. side, 3 shroud side
H-56	15 hot tears, 1 sand
H-66	OK
H-67	3 hot tears, 3 sand
H-89	OK

Material Test Reports for the following cylinder heads were also reviewed, with the following results:

Serial No.	NDE Procedure	Date
G-60	600-30 Addendum A (MT)	4-6-82
	600-50 Addendum (UT)	4-6-82
H-89	600-30 Addendum A (MT)	6-10-82
	600-50 Addendum (UT)	6-10-82
H-60	600-30 Addendum A (MT)	5-10-82
	600-50 Addendum (UT)	5-10-82

In addition, route sheets for two cylinder heads were reviewed to verify performance of dye penetrant (PT) NDE:

Serial No.	Route Sheet Operation	Inspector	Date
H-60	170	QC-30	3-23-83
H-89	170	QC-30	3-29-83

Previous TDI practice was to use the route sheet sign-off as evidence that all repairs and NDE were performed. While the test report was a compilation of the entire manufacturing, repair, and acceptance process, the NDE information was available elsewhere.

The following actions were taken to prevent recurrence of this finding: Training on the requirements of Inspection Procedure 600 was conducted for the Foundry QC Supervisor on February 3, 1984; the Inspection QC Supervisor on January 30, 1984; and mechanical inspectors and NDE technicians on October 14, 1983. This finding was also made a subject of the internal audit of the foundry conducted on March 13, 1984. In addition, forms documenting liquid penetrant and magnetic particle NDE have been revised to improve clarity.

f. Nonconformance F (Closed): Some TDI employees performing NDE on cylinder heads were not certified NDE examiners.

Corrective action for this finding was accomplished by qualifying and certifying NDE examiners in accordance with applicable standards. This training course was held on October 14, 1983 for eight TDI employees. It was conducted by a certified NDE Level III examiner.

Preventive action taken consisted of a letter to supervisors stating the TDI policy of not allowing non-certified personnel to perform NDE. This letter also listed the eight persons recently certified (corrective action above) to perform NDE. Additional preventive action was accomplished by making this item a subject of the next internal audit. The inspector verified the results of this audit that showed 61 liquid penetrant examinations were performed and stamped by qualified NDE examiners between February 8 and April 25, 1984. In addition, the inspector noted that 37 route sheets were verified by TDI as being properly documented for NDE requirements during the audit conducted on May 3 and 4, 1984.

g. Nonconformance G (Closed): Improper construction of NDE practical examinations and the TDI Level III radiographer did not maintain continuous certification.

Corrective action for this finding was accomplished by requalifying all TDI NDE personnel using a properly constructed 10

point practical evaluation portion of the examination. The inspector reviewed the NDE qualification records for all 3 NDE testers and found that each had a 10 point practical evaluation portion of the examination. Requalification for all three NDE testers was completed on October 24, 1983. (Examinations in radiographic, magnetic particle, dye penetrant and visual NDE methods). The inspector also reviewed the TDI approved suppliers list for radiographic NDE vendors and found that Transworld Testing was last audited by TDI in February, 1983. Their approval lasts until February, 1986. TDI last purchased radiography services from Transworld in May 1985 (Purchase Order #34808) as evidenced by Certified Test Report CN 6406 dated May 10, 1985.

Preventive action was accomplished by requiring a 10 point check list as part of the TDI NDE qualification procedure; maintaining a Level III examiner in all NDE disciplines or subcontracting such services; reviewing implementation of the corrective actions during the next internal audit. The inspector noted that the internal audit conducted March 13, 1984 reviewed the corrective and preventive actions of this finding and determined them satisfactory.

h. Nonconformance H (Closed): Route sheets not properly stamped or initialled by inspectors, and re-use of a surrendered inspection stamp before the mandatory 6-month waiting period had elapsed.

Corrective action for this finding is not possible since all inspection activities are complete and the subject components have been shipped to the site for installation.

Training on the requirements for proper completion and documentation of route sheets was completed in conjunction with preventive action for Nonconformance E of Inspection Report 83-01 and Nonconformance B, above (a training course given December 13 and 14, 1984 for 13 TDI inspectors). Further preventive action was taken in a new revision of the In Process Inspection Manual dated May 1, 1985, that states, in part, "...inspector will stamp or initial and date the Production Routing Sheet, Form P-135B, in the space provided."

Additional preventive action was taken by developing a new log in which the issue status of inspection stamps is recorded. The Stamp Assignment Log has six columns by which stamps can be

traced. Column headings are: Stamp No., Inspector Name; Issue Date, Cancel Date, Name (Re-Assign), and Reassign Date. This item was a subject of the internal audit conducted June 8 and 11, 1984; no findings were identified.

i. Nonconformance I (Closed): A weld machine and heat treat furnace out of calibration.

To correct this finding, TDI recalibrated all weld machines and heat treat furnaces, then added them to their calibration recall system. The effectiveness of those corrective and preventive actions was verified satisfactory during the internal QA audit conducted in March, 1984. The inspector reviewed selected weld machines and heat treat furnace calibration records during this inspection. No discrepancies were identified. A plant tour was also performed to inspect machine calibration stickers. All machines and furnaces were either in calibration or posted "Out of Service-Do Not Use." Calibration was performed by Pacific Calibration Services, who is on TDI's list of approved suppliers.

j. Nonconformance J (Closed): Weld procedure being used did not match procedure specified on route sheet.

Corrective action for this finding was accomplished by revising the route sheet for hard facing valve seats. The subject route sheet was revised to require weld procedure 100-W-17A (vice 100-W-17) on October 11, 1983. (The correct weld procedure was being used when this finding was identified, the route sheet specified the previous revision).

Preventive action for this finding was accomplished by revising the specification for hard facing valve seats. Specification 100-A-1, Addendum A, Rev 0 dated March 22, 1984 now calls for procedure 100-W-17A to be followed when hard facing valve seats. This item was the subject of the internal audit of June 8 and 11, 1984. No discrepancies were noted.

k. Nonconformance K (Closed): Completed route sheets not retained by Quality Control.

Corrective action for this finding is not possible since the assembly route sheets have never been found. Manufacturing route sheets were, however, retained by QC and were examined by the inspector.

Preventive action for this finding was accomplished by revising the procedure that governs control and retention of route sheets for manufacturing and assembly. The results of this preventive action were audited by TDI on June 8 and 11, 1984. No discrepancies were found.

1. Nonconformance L (Closed): Certificates of Compliance for combustion cylinder heads furnished to Shoreham Nuclear Power Station (SNPS) were not notarized.

   Historically, The Architect Engineer (Stone & Webster) for Long Island Lighting Company (owner-operator of SNPS) has chosen not to require performance of specification SH1-89 (notarized Certificate of Compliance) by TDI. However, to correct this finding, TDI wrote a letter to the Long Island Lighting Company (LILCo) Purchasing Agent asking if they wished to now enforce this portion of the specification. (Letter dated March 6, 1984). The inspector reviewed the reply, dated March 26, 1984, which stated, in part, "...notarization is not required for any Certificate of Compliance submitted by Transamerica Delaval Incorporated to Long Island Lighting Company for parts supplied in accordance with SH1-89."

   For preventive action, all TDI Quality Engineers were advised of this item of noncompliance and the need to review carefully all future contracts for such commitments.

3. Inspection 83-03 (October 17-21, 1983)

   a. Nonconformance A (Unresolved): A discussion of this item is found in Section D, of this report, "Unresolved Items."

   b. Nonconformance B (Closed): Written instructions not provided and a weld report not completed for welding fuel oil line clamp brackets.

      Corrective Action Request (CAR) 120 was issued on February 13, 1984 to address this finding. CAR 120 requires: Manufacturing receive instruction through the route sheet indicating the correct weld procedure to be used; the assembly department supervisor instruct the welder as to what weld procedure to use; the inspector verify that the correct weld procedure was used, the weld is acceptable, and the welder is qualified.

To assure corrective action implementation and prevent recurrence of this finding, the Manager of Quality Assurance was assigned to audit this area during the following internal audit. This item was a subject of the audit conducted on June 8 and 11, 1984. No discrepancies were noted.

c. Nonconformance C1 (Closed): Material from which ASME Code Class 3 component supports and fuel oil systems were fabricated was purchased from vendors not on TDI's Approved Suppliers List or audited by TDI.

Corrective Action C1: Of the six vendors who supplied material for supports and fuel oil systems supplied to two nuclear stations, only one (Coulter Steel Forge Co., N-Cert. #N-1189 issued 8/04/75 and expired 8/4/78) was properly authorized to be on TDI's Approved Suppliers List (ASL). The remaining five vendors were placed on the list after completing a self-audit mail-in survey short form (P-268). Corrective action for this finding was to remove all suppliers from the ASL and use only ASME Code Certificate holders or companies audited by TDI. Since 1980, TDI has used only such suppliers for nuclear materials with the exception of Bethlehem Steel, Co., Burress Harbor, Indiana, which was audited by TDI. The inspector reviewed the report of this audit, which was conducted on May 3, 1980. The audit was performed in accordance with NCA 3800 using Form P-324, as follows, "Audit conducted in accordance with the rules of NCA 3820 because no QA certificate held by Bethlehem Steel Co. for steel plate. Overall evaluation-Facility approved as material manufacturer of steel plate per [NCA] 3820." Removal of improperly approved suppliers and the enforced policy of TDI to use only properly approved suppliers, or those holding valid ASME certificates, is the preventive action for this finding.

d. Nonconformance C2 (Closed): Prior to 1982, ASME Code Class 3 fasteners were purchased from vendors neither on TDI's Approved Supplier's List nor audited by TDI.

Corrective Action C2: Since March of 1982, TDI has purchased Code fasteners from Sargent Nut and Bolt, a distributor of Power and Engineered Products Co. (PEPCo). The inspector examined PEPCo's Quality Certificate (QSC #399 dated March 3, 1980 to March 3, 1983). QSC #399 was renewed by PEPCo on February 25, 1983, and has a current expiration date of March 3, 1986.

e. Nonconformance D (Closed): Receipt inspection of Code fasteners did not assure compliance with Purchase Order. Specifically, the material composition of the fasteners did not meet requirements, mechanical test data was incomplete and heat treatment information was missing.

Corrective action for this finding was accomplished by performing laboratory and physical tests to establish material composition and strength of the fasteners. The following table presents the material test results as reviewed by the inspector:

Bolt Heat No.	Test Date	Yield (PSI)	Tensile (PSI)	Elongation (%)	Area Red. (%)
N-37268	2/29/84	134,100	144,300	19	60
N-35238	2/29/84	126,700	135,600	18	65
N-54957*	2/29/84				

*Bolt from Heat N-54957 was too small for the pull bar.

The tests were performed and certified by physical test laboratory #4-113, Testing and Controls Co. The strength tests indicate that the requirements of ASME Section II, Table 1 of SA 325 were satisfied. Material composition tests were performed by spectroscope on February 27, 1984, with the results found to be in compliance with the purchase order.

Preventive action has been accomplished by revising the QA Manual requirements of receipt inspection and its relationship to Quality Engineering as follows: "All material or item certifications/documents are reviewed by the Receiving Inspector for compliance with the Purchase Order. After this review, the Receiving Inspector contacts Quality Engineering for their review and acceptance of the documents for compliance to the codes and standards." This change to the QA Manual is found in Control of Purchased Material, Items and Services, Section 4.0 of the Third Edition, Revision 0 dated April 10, 1984. This change was reviewed and approved by a representative of the Hartford Steam Boiler Company (TDI Authorized Nuclear Inspector) on April 11, 1984.

f. Nonconformance E (Open): This finding involves fasteners (nuts, bolts and screws) that were purchased as stock material and subsequently certified as being in compliance with ASME Code

Section III, yet the applicable material requirements of the Code were not met. To date, TDI has not addressed the issue central to this finding. To wit: TDI has not accepted that a material check-analysis is required by ASME Code Section 3867.4e(2), and thus the material is not in compliance with Code requirements. Further, TDI has not proposed adequate corrective action (e.g., notify purchasers of such fasteners that they may not comply with Code requirements).

Preventive action proposed by TDI is to purchase ASME Code material only from suppliers having a current ASME Quality Certificate. In addition, material documentation is now reviewed by a Receiving Inspector for compliance with the purchase order, and a Quality Engineer for compliance with applicable codes and standards.

g. Nonconformance F (Closed): Discrepancies were noted between inventory records used in the TDI storage area and the material used in construction of some engine piping system supports.

This finding was corrected by deleting Form P-316, Material Control Record, from the TDI QA Program. Form P-316 was the document used to keep track of material in storage at TDI, while the Material Verification Sheet is the official record of material used in component manufacture. The inspector reviewed the current copy of the QA Manual and found Form P-316 deleted. In addition, the Code Data Package for P.O. NY435079 (starting air system) was reviewed and found to contain the required Material Verification Sheet to be reviewed by the Authorized Nuclear Inspector.

h. Nonconformance G (Closed): Prior to 1981, the TDI foundry did not perform stress relief heat treatment on model AN piston skirts as specified in engineering drawings. As a result of this lack of stress relieving, some model AN piston skirts cracked in service.

Corrective action for this finding was accomplished through the issuance of a 10 CFR Part 21 report dated October 28, 1982. In the Part 21 report, the six utilities that received these piston skirts were identified (each was sent their own copy of the 10 CFR Part 21 report) and advised to either return them to TDI for proper stress relieving, or replace them with properly manufactured model AE piston skirts. The inspector sampled TDI records to verify that the affected utilities properly responded to this Part 21 notification.

Preventive action committed to by TDI in their letter of March 2, 1984 has been fully accomplished. Their commitment was in the form of Corrective Action Request (CAR) 121, which was initiated by TDI on February 13, 1984 and closed on September 24, 1984. This CAR directed that foundry heat treat charts be revised to better control and document heat treat activities, and required a documented review of engineering drawing heat treatment requirements. Better control and documentation of foundry heat treatment is now afforded through a new Heat Treat Load Chart (Form P-396). The new chart indicates Series Number, Heat Number and Part Number. In addition, TDI performed a failure analysis (FA Report #153, dated June 20, 1983) on the circumstances surrounding the heat improper treatment of Model AN piston skirts. It was established that there was some confusion between the material and associated hardness requirement for the ductil iron used to make the piston skirts. While the material composition had a tensil strength of 80,000 psi, the heat treatment specification called for hardness equivalent to 100,000 psi material. Since the material and its heat treatment for hardness were incompatible, TDI changed the material specification to 100,000 psi tensil strength material and has replaced all AN piston skirts with the newly designated model AE piston skirt.

H. EXIT INTERVIEW

The single nonconformance identified during this inspection, as well as the resolution status of all previous violations and nonconformances, were discussed with TDI management at the exit interview.

PERSONS CONTACTED

Company TRANSAMERICA DELAVAL

Docket/Report No. 99900334/85-01

Dates JUNE 3-7, 1985

Inspector E.H. TROTTIER

NAME(Please Print)	TITLE(Please Print)	ORGANIZATION(Please Print)
R.E. Boyer *	Mgr, QA	TDI
Alan C. Barich *	Service Mgr	TDI
Lance R. Block *	QA Engineer	TDI
Ron Pabers *	Sales Mgr	TDI
Gene Wilson *	Operations Mgr	TDI
Al Fleischer *	Engineering Mgr	TDI
J.C. Higgins *	Nuclear Engineer	USNRC/BNL
E.H. TROTTIER *	Reactor Engineer	USNRC
Ken Kropf	QA Super., FOUNDRY	TDI
Chet Renfro	Super, Mfg. QC	TDI
*Present at Exit Meeting		

INSPECTOR: J.C. HIGGINS

SCOPE: TRANSAMERICA DELAVAL

DOCKET NO.: 99900334

REPORT NO.: 85-01

DOCUMENTS EXAMINED

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE/SUBJECT
1	PRO	—	—	1/26/81	TDI Division 10 CFR 21 Policy
2	PRO	—	—	5/31/85	" " "
3	PGM	—	0	3/6/85	Quality Assurance Program (4TH Edition)
4	PGM	—	0	10/20/84	Customer Service Dept. QA Manual
5.	BOOK	—	Various	Var.	Book of Nuclear Service Information Memos
6.	BOOK	—	Var.	Var.	Manual of Service Dept. Rules
7	PRO	IP-200			Shipping & Receiving QC Procedure
8	PRO	IP-300	—	—	In Process Inspection Procedure
9	PGM	—	—	—	Engineering Quality Manual, including Eng Quality Procedures No's 6 and No. 7
10.	RPT	—	Var.	Var.	Selected Field Service Reports
11	Minutes	—	—	Var.	Selected Minutes from Delaval Product Quality Meeting
12	Records	—	Var.	Var.	Warranty Service Order Forms (Selected

TYPE OF DOCUMENT:

DWG - Drawing
SPC - Specification
PRO - Procedure
QAM - QA Manual
QCD - QC Document
P.O.- Purchase Order
INM - Internal Memo

LTR - Letter
PGM - Program
RPT - Report
___ - _____
___ - _____
___ - _____
___ - _____

INSPECTOR: J.C. HIGGINS

SCOPE: TRANSAMERICA DELAVAL

DOCKET NO.: 99900334

REPORT NO.: 85-01

DOCUMENTS EXAMINED

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE/SUBJECT
13	PRO	-	-	-	Informal Returned Material Request Procedure
14	Files	-	-	Various	Memo and Evaluation Files for Part 21 Items
15	List	-	-	May 85	Approved Suppliers List
16	Letters		-	Var.	Selected Letters between TDI and Customers
17	Test	-	-	-	Test Data for temperature test run for TVA
18	Audits	-	-	Var.	Selected internal audits of TDI by TDI-QA
		-	-		and by Management Analysis Corp (MAC)
19	Book	-	-	Var	Book of TDI Corrective Action Reports

TYPE OF DOCUMENT:

DWG - Drawing
SPC - Specification
PRO - Procedure
QAM - QA Manual
QCD - QC Document
P.O.- Purchase Order
INM - Internal Memo
LTR - Letter
___ - _____
___ - _____
___ - _____
___ - _____
___ - _____
___ - _____

INSPECTOR C. H. TROTTER

SCOPE TRANSAMERICA DELAVAL

DOCUMENTS EXAMINED

DOCKET NO. 99900334

REPORT NO. 85 - 01

PAGE 1 OF 6

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
1	QAM	Third Ed.	4	6-7-84	TDI QA manual, Third Edition
2	QAM	Fourth Ed.	0	3-6-85	TDI QA manual, Fourth Edition
3	QCD	—	0	5-1-85	In process Inspection Manual IP-200
4	QCD	QCP 3.1	0	4-4-84	Qualification of Auditors
5	QCD	—	-	3-5-84	Metallurgical Lab Report on F.I. Tubing
6	QCD	P-391	-	7/83	New Production Routing Sheet (Jobs History)
7	P.O.	17558	-	5-2-84	Fuel Injection Tubing P.O.
8	↓	55571	-	10.21.83	↓
9		17873	-	5-22-84	
10		18700	-	8-9-84	
11		18947	-	8-30-84	
12		19667	-	10-29-84	
13		18479	-	7-16-84	
14	LTR	—	-	11-4-83	Letter from Mgr of QA to QC Super. Re: Required Training
15	TNM	—	-	12-12-83	Training Record (Receiving Inspector)

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
TNM - TRAINING MEMO

LTR - LETTER

INSPECTOR E.W. TROTTER
SCOPE Transamerica Delaval

DOCUMENTS EXAMINED

DOCKET NO. 99900374
REPORT NO. 85 - 01
PAGE 2 OF 6

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
16	QCD	—	—	1-1-84	Audit Report
17	QCD	E-114	—	11-8-83	"Drawing Room Practice" Form E-114
18	INM	—	—	12-4-83	Training Memo - Drafting Group Supv
19	INM	—	—	11-17-83	Training Memo - Design Engineers
20	QCD	—	—	1-3-84	Training Record (Drawing Room Practice)
21	QCD	E-196-1	2	8/77	Engine Calculation Sheet (Signed by Mgr of Engr on 11-9-83)
22	INM	—	—	5-29-85	Memo RE: Design Calc. Book Review Schedule
23	QCD	EOP#9	—	1-13-84	Engr Op. Proc. #9, "D Sheets" (Revised 10-12-84)
24	QCD	4947	—	1-19-84	"D Sheet"
25		4998		2-6-84 2-26-84	
26		4999	—	3-15-84	
27		5000	—	3-19-84	
28		5001	—	3-28-84	
29		5002	—	4-2-84	
30		5003	—	4-2-84	

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
TNM - TUTORIAL MEMO

LTR - LETTER

INSPECTOR E. H. TROTTER
SCOPE TRON/America Delaval

DOCUMENTS EXAMINED

DOCKET NO. 99900334
REPORT NO. 85 - 01

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
31	QCD	5004	-	4-27-84	"D Sheet"
32	QCD	5005	-	4-12-84	"D Sheet"
33	QCD	-	-	12-13-84	Route Sheet Training Record
34	QCD	-	-	12-14-84	Route Sheet Training Record
35	RPT	S/U Form 716	10/82	10-12-83	Field Inspection Report (Assembly Verification)
36	QCD	-	-	11/84	Internal Audit Report
37	QCD	-	-	10-11-82	Route Sheet (Jacket Water Pp Shaft)
38	QCD	-	-	11-14-77	Route Sheet (Seal Retainer Rings)
39	SPEC		-	11-8-83	Purchased Mat'l Spec Sheet (GOP-7, Rev 6 10-12-82)
40	QCD	-	-	4-5-84	Internal Audit Report
41	P.O.	62643		10-13-76	P.O. for 4 Exhaust Silencers (Included Spec 75051-120, Rev B)
42	QCD	Append 6	-	6-16-76	QA Requirements for Perry 1+2.
43	QAM	Third Ed	3	3-15-84	Rev. 3 to Third Edition (Section 13.2 ASME + SWI ASME Inspection)
44	QCD	-	-	5-10-77	Route Sheet Revision
45	QCD	82-242	-	3-26-84	C of C for 10 SONGS Pistons

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT
P.O. - PURCHASE ORDER
LTR - LETTER
RPT - Field Insp Report
___ - _____
___ - _____
___ - _____
___ - _____

INSPECTOR E. H. TROTTIER
SCOPE Transamer vs Delaval

DOCUMENTS EXAMINED

DOCKET NO. 99900334
REPORT NO. 85 - 01
PAGE 4 OF 6

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
46	QCD	82-172	-	3-4-82	C of C for 3 SONGS Pistons
47	QCD	82-248	-	3-28-82	C of C for 10 SONGS Pistons
48	P.O.	27693	-	-	Sales Order for Piston Rework
49	QAM	-	-	7-15-84	Section 2.2.3.1 Revised (Rework Stamp)
50	QAM	-	4	6-7-84	Section 16.2.1 Revised (Route Sheet Repair)
51	QCD	-	-	3-22-84	Training Session on Route Sheet Control
52	QCD	-	-	-	Casting and Machining Problems w/ RV-4 Steel Cyl. Heads Report
53	QCD	-	-	4-6-82	Material Test Report
5	QCD	-	-	6-10-82	Material Test Report
55	QCD	-	-	5-10-82	Material Test Report
56	QCD	-	-	3-23-83	Route Sheet (Head H-60)
57	QCD	-	-	3-9-83	Route Sheet (Head H-89)
58	QCD	-		2-3-84	Training Record (Foundry QC Supervisor)
59	QCD	-		10-14-83	Training Record (Mech Insp + NDE Techs)
60	QCD	113	-	1-30-84	CAR 113

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT

LTR - LETTER

INSPECTOR E. H. TROTTER

SCOPE TransAmerica Delaval

DOCUMENTS EXAMINED

DOCKET NO. 99900334

REPORT NO. 85 - 01

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
61	QCD	114	-	1-30-84	CAR 114
62	QCD	—	-	3-13-84	Foundry Audit Report
63	QCD	—	—	10-14-83	Training Record (NDE)
64	LTR	—	—	10-4-83	NDE Performance Peling. Letter
65	QCD	—	-	5-3,4,84	Audit to Close CAR 113 + 114 (NDE between 2-8 + 4-25-84)
66	QCD	—	-	9-26-83 10-4-83	RT + MT Training Records
67	QCD	—	-	9-28-83 9-27-83	PT Training Records
68	QCD	-	-	3-25-85	Approved Suppliers List
69	P.O.	34808	-	5-85	P.O. for RT Services
70	RPT	CN 6406		5-30-85	Certified Test Report
71	QCD	—	-	3-13-84	Audit Report (NDE)
72	QCD	—	-	6-18-84 10-1-83	Stamp Log Pages
73	QCD	—	—	10-11-83	Revised Route Sheet (to show 100-W-17A)
74	QCD	119	—	2-13-84	CAR 119 (Change Weld Procedure 100-W-17 to 17A)
75	QCD	—	-	3-27-84	Audit Report

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT

LTR - LETTER
RPT - Report

INSPECTOR C. H. TROTTER

SCOPE Trans America Delaval

DOCUMENTS EXAMINED

DOCKET NO. 99900324

REPORT NO. 85-01

PAGE 6 OF 6

ITEM NO.	TYPE OF DOCUMENT	DOCUMENT NO.	REV.	DATE	TITLE / SUBJECT
76	LTR	—	—	3-26-84	Letter to TDI from SWEC Re: Notarized C of Cs for LCCo
77	QCD	CAR 120		2-13-84	Requirements for instructions to Manuf., Assy & Inspection
78	QCD	—	—	8-4-75	Nuclear Certification N-1189 for Coulter Steel Forge Co.
79	P.O.	—			Various Midland + Grand Gulf P.O.'s to find F.O. Pipe Suppliers
80	RPT	—	—	5-3-80	Audit Report, Beth Steel Co.
81	QCD	—	—	3-3-80 2-25-83	PEPCo QSC # 399 and current revision
82	RPT	—		2-29-84	Report of Mechanical Tests Performed
83	RPT	—	—	2-27-84	Spectrographic Test Results
84	QCD	—	—	—	Code Data Package for Shearon P. Harris Starting air skid P.O. NY435079

TYPE OF DOC:

DWG - DRAWING
SPEC - SPECIFICATION
PRO - PROCEDURE
QAM - QA MANUAL
QCD - QC DOCUMENT

LTR - LETTER
RPT - REPORT