

115

RELATED CORRESPONDENCE

DUKE POWER COMPANY

LEGAL DEPARTMENT

P. O. Box 33139

CHARLOTTE, N. C. 28242

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 LEWIS F. CAMP, JR.
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 ALBERT V. CARR, JR.
 ROBERT M. BISANAR
 WILLIAM J. BOWMAN, JR.
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DOCKETED
USNRC 704 373-2570

July 6, 1984 '84 JUL -9 P12:40

OFFICE OF SECRETARY
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WASHINGTON, D.C.

50-413,414

James L. Kelley, Chairman
 Atomic Safety and Licensing Board Panel
 U. S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Dr. Paul W. Purdom
 235 Columbia Drive
 Decatur, Georgia 30030

Dr. Richard F. Foster
 P. O. Box 4263
 Sunriver, Oregon 97702

Re: Duke Power Company, et al.
 (Catawba Nuclear Station, Units 1 and 2)
 Docket Nos. 50-414 and 50-415

Gentlemen:

I am attaching to this letter the following items which were omitted from "Applicants' Supplemental Response to 'Palmetto Alliance and Carolina Environmental Study Group's Interrogatories and Requests to Produce Documents on Diesel Generators Contentions to Applicants and NRC Staff' and 'CESG's Interrogatories to Duke Power Regarding Emergency Diesel Contentions Admitted by Atomic Safety and Licensing Board'".

1. Affidavits of G. Wayne Hallman, Russell P. Muschick, William R. McCollum and J. E. Cooper, who provided the information contained in the supplemental responses;

2. Updated Attachment No. 4, in response to PA/CESG Interrogatory 49A. Upon review, it was determined that no update to Interrogatory 49 (Attachment 3) was necessary; therefore, no updated Attachment 3 is included, as had been indicated in Applicants' supplemental response;

3. List of documents relevant to the admitted contention which have been made available for inspection and copying by Intervenors.

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DS03

Page two
July 6, 1984

This transmittal reflects the current status of discovery material on the diesel generator contention. Should further updates be required, Applicants will inform the Board and parties.

Sincerely yours,

Albert V. Carr, Jr.
Albert V. Carr, Jr.

c: Service List (w/encl.)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

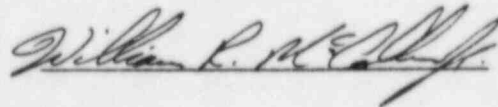
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
DUKE POWER COMPANY, et al.) Docket No. 50-413
(Catawba Nuclear Station) 50-414
Units 1 and 2))

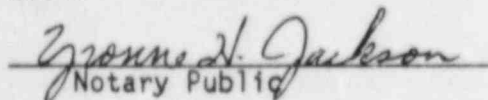
AFFIDAVIT

I, William R. McCollum, being duly sworn, hereby state that I am employed by Duke Power Company as Catawba Unit 1 Schedule Engineer. The business address for Duke Power Company is 422 South Church Street, Charlotte, North Carolina.

I have been responsible for furnishing the basic information used in providing supplemental responses to those Interrogatories by Palmetto Alliance and Carolina Environmental Study Group concerning the diesel generator contention admitted by the Atomic Safety and Licensing Board by which my initials appear. Those responses are true and correct to the best of my knowledge and belief.



Subscribed and sworn to before
me this 5th day of July
1984.


Notary Public

My Commission expires: 10-16-90

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
DUKE POWER COMPANY, et al.) Docket No. 50-413
(Catawba Nuclear Station) 50-414
Units 1 and 2))

AFFIDAVIT

I, James E. Cooper, being duly sworn, hereby state that I am employed by Duke Power Company as Technical Specialist. The business address for Duke Power Company is 422 South Church Street, Charlotte, North Carolina.

I have been responsible for furnishing the basic information used in providing supplemental responses to those Interrogatories by Palmetto Alliance and Carolina Environmental Study Group concerning the diesel generator contention admitted by the Atomic Safety and Licensing Board by which my initials appear. Those responses are true and correct to the best of my knowledge and belief.

James E. Cooper III

Subscribed and sworn to before
me this 5th day of July
1984.

Marquette J. Jennings (Watson)
Notary Public

My Commission expires: 8-1-84

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

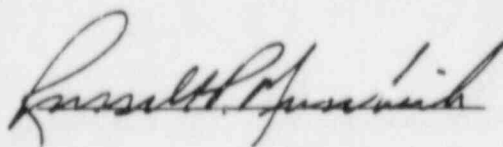
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
DUKE POWER COMPANY, et al.) Docket No. 50-413
(Catawba Nuclear Station) 50-414
Units 1 and 2))

AFFIDAVIT

I, Russell P. Muschick, being duly sworn, hereby state that I am employed by Duke Power Company as Maintenance Engineer. The business address for Duke Power Company is 422 South Church Street, Charlotte, North Carolina.

I have been responsible for furnishing the basic information used in providing supplemental responses to those Interrogatories by Palmetto Alliance and Carolina Environmental Study Group concerning the diesel generator contention admitted by the Atomic Safety and Licensing Board by which my initials appear. Those responses are true and correct to the best of my knowledge and belief.



Subscribed and sworn to before
me this 2 day of July
1984.

Jo Ann D. Bowman
Notary Public

My Commission expires: 7-12-88

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

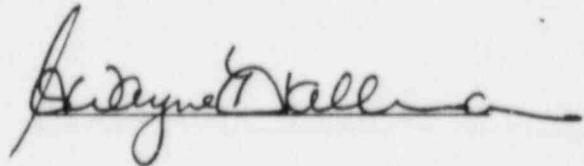
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
DUKE POWER COMPANY, et al.) Docket No. 50-413
(Catawba Nuclear Station) 50-414
Units 1 and 2))

AFFIDAVIT

I, G. Wayne Hallman, being duly sworn, hereby state that I am employed by Duke Power Company as Nuclear Maintenance Manager. The business address for Duke Power Company is 422 South Church Street, Charlotte, North Carolina.

I have been responsible for furnishing the basic information used in providing supplemental responses to those Interrogatories by Palmetto Alliance and Carolina Environmental Study Group concerning the diesel generator contention admitted by the Atomic Safety and Licensing Board by which my initials appear. Those responses are true and correct to the best of my knowledge and belief.



Subscribed and sworn to before
me this 5th day of July
1984.

Margaret D. Henderson
Notary Public

My Commission expires:

The following is a listing of significant events during the Diesel Generator 1A Extended Run:

- 1200 hrs 1/25/84 - Diesel Generator 1A started and loaded to 7000 KW.
- 2300 hrs 1/26/84 - While loaded to 7000 KW, the Right Front Turbocharger
Accumulated Hours - Lube Oil Drip Line failed at the ferrule. The engine
232.5 hours - manually shutdown to prevent oil spray. This line is
Time for Repair - 1/4" S.S. tubing which supplies lube oil to the Right
8 hours - Front Turbocharger bearings during standby. The
failure appeared to be the result of over tightening
the tubing nut and vibration. The tubing was
replaced under WR8064OPS. The suggestions for long
term action are:
- 1) Use thicker wall S.S. tubing.
 - 2) Observe proper station procedures for tubing.
 - 3) Design a better support for this tubing, or add
a vibration dampener.
- The final resolution will be documented on a NCI.
- 0700 hrs 1/27/84 - Diesel Generator 1A restarted and loaded to 7000 KW.
- 0800 hrs 1/29/84 - While loaded to 7000 KW, the delivery valve holder on
Accumulated Hours - the 1L Fuel Oil Injection Pump cracked. The engine
281.5 hours - was manually shutdown to prevent a fire hazard. The
Time for Repair - delivery valve holder is a casting which houses the
14 hours - delivery valve of the Fuel Oil Injection Pump. This
housing is subjected to cyclic hydraulic pressures of
3000 psig. The entire Fuel Oil Injection Pump was
replaced under WR8095OPS. The defective delivery
valve holder was sent to B & W Labs in Ohio for
analysis. Results are pending and the problem will
be resolved through NCI CN-065.
- 2200 hrs 1/29/84 - Diesel Generator 1A restarted and loaded to 7000 KW.
- 1700 hrs 2/4/84 - While loaded to 7000 KW, a temporary modification to
Accumulated Hours - the Left Front Turbocharger Lube Oil Drain failed
419.5 hours - resulting in an oil spill. The engine was manually
Time for Repair - shutdown to prevent a fire hazard. It was decided to
267 hours - repair several problems at this time.

The Turbo Lube Oil Pressure had been decreasing since 2/1/84. Upon investigations performed by Duke, Delaval and Elliot representatives, it was determined that both the Right Front and Left Front Turbochargers had experienced thrust bearing failures. The problem was as a result of insufficient lube oil being supplied to the thrust bearing faces during startup. The oil flow was measured at .0211 gph per turbocharger. After discussions with Delaval, the oil flow was increased to .1427 gph per turbocharger. Further analysis is being performed by Delaval to determine a solution to thrust bearing failure. The turbochargers were replaced under WR1429PRF and WR1445PRF.

The 3L Cylinder Head started leaking jacket water on 2/3/84. This indicated a possible cracked cylinder head. Upon removing the suspect head and pressuring with water, it was verified that a hairline crack had developed. The crack was located in the area where the Fuel Oil Injector goes through the head. The cylinder head was replaced under WR1430PRF. The cause of the failure presently appears to be a casting imperfection. Final resolution will be through NCI CN-067.

While the cylinder head was being replaced, the push rods were examined for cracks. Since 2 of 3 push rods on 3L were cracked, all other push rods were removed. Upon examination numerous push rods showed linear indications in the weld areas. A new version of push rod is being manufactured by TDI which utilizes friction welding. This new type push rod was placed into the engine. NPR-CR-2169A was written to document this change.

While replacing the push rods, it was noticed that the 1R Rocker Box Assembly was damaged. The Rocker Box Assembly holds the Rocker Arms in place for engine operation. The damage was next to the Intermediate Exhaust Rocker Arm. The entire Rocker Box Assembly was replaced under WR1446PRF. The cause of the failure appears to be as a result of a misalignment of the Intermediate Exhaust Rocker Arm dowel pin. This misalignment probably occurred during the Spring 1983 rebuild of this engine. This problem has been documented on NCI CN-066.

The following items were performed during this shutdown:

- 1) The Turbocharger Lube Oil Drip Line orifices were drilled to .070" under WR1455PRF. This size orifice delivers .1427 gph of lube oil to each turbocharger.

- 2) Right Bank Turbocharger Exhaust Manifolds bolts had failed (4 total failures). These are 1/2" diameter bolts of a non-ferrous material. The bolts were replaced by other bolts manufactured by TDI. This problem will be documented on a NCI.
- 3) A 3/8" S.S. tubing line had been misaligned due to an impact causing the line to rub against the engine. Vibration caused this line to wear through resulting in an air leak. This line is part of the Control Air System and is identified as line E-53 (60 psi Supply). The tubing was replaced under VR1439PRF.

2030 hrs 2/15/84 - Diesel Generator 1A restarted and loaded to 7000 KW.

0130 hrs 2/19/84 - Diesel Generator 1A was manually shutdown to
 Accumulated Hours - investigate possible water loss from the Jacket
 296.5 hours Water System and reason for excessive Outlet
 Time Down - 40.5 hrs temperatures on Jacket Water and Lube Oil. No
 apparent reason for discrepancies. This was
 subsequently resolved (see 05:30 hrs - 2/23/84
 entry).

1800 hrs 2/20/84 - Diesel Generator 1A restarted and loaded to 7000 KW.

1640 hrs 2/21/84 - Diesel Generator 1A was manually shutdown again in an
 Accumulated Hours - attempt to determine why Outlet temperatures on Jacket
 517 hours Water and Lube Oil are high. No apparent reason for
 Time Down - 11 hours discrepancies. This was subsequently resolved (see
 05:30 hrs 2/23/84 entry).

0545 hrs 2/22/84 - Diesel Generator 1A restarted and loaded to 7000 KW.

0653 hrs 2/22/84 - While loaded to 7000 KW, the Left Front Turbocharger
 Accumulated Hours - Lube oil Drip Line failed at the ferrule. The engine
 518 hours was manually shutdown to prevent oil spray. This line
 Time for Repair - is 1/4" S.S. tubing which supplies Lube Oil to the
 22.5 hours Left Front Turbocharger bearings during standby. The
 failure appears to be the result of over-tightening
 the tubing nut and vibration. The tubing was
 replaced under VR82890PS. Actions implemented are:

- 1) Use of thicker wall S.S. tubing.
- 2) Added vibration dampeners for this tubing.

- 0530 hrs 2/23/84 - Diesel Generator 1A restarted and loaded to 7000 KW. Subsequent to this start, the solution to the Jacket Water loss and high Outlet temperatures was discovered. The thermocouples which read the Outlet temperatures were found to be defective. These were replaced under WR1497PRF. The water loss was attributed to misinterpretation of system instrumentation.
- 1030 hrs 2/25/84 - Diesel Generator 1A manually shutdown to repair crack in the Right Front Turbocharger Aftercooler. The crack developed in the aftercooler casing at the Inlet flange. The aftercooler casing was replaced under WR708MNT. The crack appears to be the result of an incorrect alignment of the Turbocharger flange and the Aftercooler flange. The suggestion for long term action is to ensure proper flange alignment before torquing any of the Turbocharger bolts.
- Accumulated Hours -
571 hours
Time for Repair -
35.5 hours
- 2200 hrs 2/26/84 Diesel Generator 1A restarted and loaded to 7000 KW.
- 0840 hrs 2/29/84 Diesel Generator 1A manually shutdown to prevent fire hazard. The tubing ferrule on the 7L Fuel Oil Injector had an indentation. This resulted in a fine mist of Fuel Oil being sprayed onto the head. The entire tubing assembly was replaced under WR83180PS. This problem will be documented by an NCI.
- Accumulated Hours -
629.5 hours
Time for Repair -
32 hours
- While the engine was shutdown, it was noticed that a 1/2" capscrew on the 1R side door cover was missing its head. Upon replacing that bolt and retorquing the cover, another capscrew head sheared off at less than 15 ft-lb. The bolts were replaced under WR1515PRF. Further failure analysis is needed and will be documented by a NCI.
- 1700 hrs 3/1/84 - Diesel Generator 1A restarted and loaded to 7000 KW.
- 1730 hrs 3/8/84 - Diesel Generator 1A manually shutdown to allow for prerequisite testing needed to start the Engineered Safeguard Features Actuation Functional Test.
- Accumulated Hours -
798 hours
Time Down - 7 hours
- 0020 hrs 3/9/84 - Diesel Generator 1A restarted and loaded to 7000 KW.

- 1700 hrs 3/9/84 - End of extended run test. Diesel Generator 1A manually shut down. Total accumulated run time - 815 hrs.
- 3/14/84 - As a prerequisite for the Engineered Safeguard Features Actuation (ESFA) Functional Test, the Diesel Generator 1A was manually started. The engine was manually shutdown after 1 minute due to a clogged fuel strainer. After cleaning the strainer, the Diesel Generator 1A was restarted and verified as ready for testing.
- 3/16/84 - During the ESFA Functional Test, the Diesel Generator 1A did not respond to an emergency start signal due to a faulty relay in the Diesel Generator 1A load sequencer. Investigation into the non-response revealed that the relay had burned out due to a temporary modification installed in the sequencer logic system during checkout. This modification was rewired and the relay replaced.
- 1950 hrs 3/17/84 - Diesel Generator 1A restarted for 24 hour full load capacity test.
- 0330 hrs 3/19/84 - Full load test satisfactorily completed. Diesel Generator 1A manually shutdown.
- 2000 hrs 3/19/84 - Diesel Generator 1A manually restarted to warm-up for ESFA test.
- 2201 hrs - Diesel Generator 1A manually shutdown.
- 2204 hrs - Diesel Generator 1A received ESFA signal. The Diesel Generator 1A responded and ran for 1 hour, then was manually shutdown.
- 3/20/84 - The Diesel Generator 1A was manually restarted to calibrate test equipment. After 2 minutes, the engine tripped due to leaking fittings on the control air system (causing spurious trips). After 6 additional starts, the leaking fittings were located and corrected.
- 3/21/84 - The Diesel Generator 1A was restarted for ESFA test. The Diesel Generator 1A ran satisfactorily for 1 hr at 7700 KW and then manually shutdown. The Diesel Generator 1A was again restarted and run satisfactorily for 1 hr at 7000 KW.
- 3/22/84 - The Diesel Generator 1A was restarted on a simultaneous blackout and LOCA signal. The Diesel Generator 1A was run satisfactorily for 66 minutes at 4100 KW (full LOCA load) and then manually shutdown.
- 3/26/84 - The Diesel Generator 1A was manually restarted and run for 1 hr at no load to calibrate test equipment, then manually shutdown.

- 3/27/84 - The Diesel Generator 1A was restarted via ESFA signal and run for satisfactorily 1 hr at no load, then manually shutdown.
- 3/29/84 - The Diesel Generator 1A was restarted for blackout testing. After approximately 2 minutes, the Diesel Generator 1A tripped and showed no trip indications.
- 3/29-84 - 3/30/84 - During this period the Diesel Generator 1A was started an additional 21 times as part of the troubleshooting of the cause of the trip described above. The "TIMER/NOT 9" pneumatic module on the shutdown logic board had drifted out of calibration, causing the engine to trip after 2 minutes. The module was recalibrated. The Diesel Generator 1A was then restarted and run for 15 minutes for the blackout and load rejection test at 7000 KW, then manually shutdown. The Diesel Generator 1A performed satisfactorily after recalibration of the module.
- 3/31/84 - The Diesel Generator 1A was restarted and run for blackout testing. The Diesel Generator ran satisfactorily for 15 minutes at 3000 KW, carrying blackout loads only.
- 4/02/84 - The Diesel Generator 1A was restarted and run for blackout and load rejection tests. The Diesel Generator 1A ran satisfactorily for 1 hr at 7000 KW, and was then manually shutdown.
- 4/03/84 - The Diesel Generator 1A was manually started and run for 15 minutes at no load, then manually shutdown. The Diesel Generator 1A was again restarted and run for 40 minutes at no load, then manually shutdown.

After an accumulated 857 hours of operating time, disassembly of Diesel Generator 1A began for its detailed inspection of the engine. The results and conclusions of this detailed inspection are contained in the report entitled "Catawba Nuclear Station, Diesel Engine 1A Component Revalidation Inspection, Final Report" dated June 29, 1984, which was submitted to the Nuclear Regulatory Commission on that date.

The following is a listing of significant events during the Diesel Generator 1B Extended Run:

- 1700 hrs 5/30/84 - Diesel Generator 1B started and loaded to 7000 KW.
- 2250 hrs 5/31/84 - The Diesel Generator was manually shutdown by the shift supervisor because of oscillations in the voltage regulator. After evaluations were performed, the oscillations were not considered to be detrimental, and the Diesel Generator was approved for restart.
- Accumulated hours 281.5 hrs
- 0050 hrs 6/01/84 - Diesel Generator 1B was restarted and loaded to 7000 KW
- 0720 hrs 6/03/84 - Diesel Generator 1B was manually shutdown due to a leak on the right bank aftercooler inlet jacket water line coming from a crack between the casing and the flange. Preliminary estimations of the cause of the crack was vibration. The aftercooler was weld repaired and returned to service under Work Request No. 9822 OPS. In addition, both turbochargers were replaced because of excessively worn thrust bearings caused by the inadequate pre-lube during starting. (Work Request No. 9794 OPS) A redesign of the turbocharger pre-lube system is currently in progress, which will provide a greater flow to the turbocharger thrust bearings. Also, the 7R fuel pump was replaced due to low pyrometer readings on this cylinder (WR 2180 PRF). This corrected the low temperature problems when the engine was restarted.
- Accumulated hours 335.5 hrs.
- 2021 hrs 6/12/84 - Diesel Generator 1B was restarted and loaded to 7000 KW.
- 0817 hrs 6/15/84 - Diesel Generator 1B tripped on low lube oil pressure. This occurred as operations personnel were attempting to change the lube oil strainers while the Diesel Generator was on line.
- While the engine was down, the 5L fuel injection pump was replaced due to low pyrometer readings on this cylinder (WR 2259 PRF). At the same time, the 5L fuel injector was checked under WR 2262 PRF. It was determined that the injector was the cause of the problem rather than the fuel injection pump. The injector was replaced.
- It was noted that a 1/2" capscrew on the right bank starting air distributor was sheared off. This capscrew was replaced under WR 10023 OPS. The probable cause of the capscrew failure was engine vibration.
- 6/15/84 - 6/21/84 - Diesel Generator 1B was started and stopped several times during this period while repairing and adjusting the voltage regulator. During this time the Diesel Generator accumulated an additional 5 hours of operating time.
- 1400 hrs 6/21/84 - Diesel Generator 1B was restarted and loaded to 7000 KW.

1700 hrs 6/22/84 - Diesel Generator 1B was manually shutdown for ESFA test.
Accumulated hours
427 hrs

2220 hrs 6/22/84 - Diesel Generator 1B was restarted and loaded to 7000 KW.

0337 hrs 6/26/84 - Diesel Generator 1B was manually shutdown to repair a
Accumulated hours fuel oil line leak at the filter. A damaged ferrule was
504 hrs replaced under WR 10152 OPS.

0625 hrs 6/26/84 - Diesel Generator 1B was restarted and loaded to 7000 KW.

0955 hrs - Diesel Generator 1B was manually shutdown to permit ESFA
test.

1500 hrs - Diesel Generator 1B was restarted and loaded to 7000 KW.

2012 hrs - Diesel Generator 1B was manually shutdown to permit ESFA
test.

2351 hrs - Diesel Generator 1B was restarted and loaded to 7000 KW.

0740 hrs 7/01/84 - Diesel Generator 1B was manually shutdown because of
Accumulated hours jacket water leaks in cylinder heads 8R, 7R, and 4L. 8R
616 hrs cylinder head was replaced. Cylinder heads 7R and 4L
were considered to be acceptable leaks, not detrimental
to the engine. The cause of the crack in the 8R head is
currently under investigation.

1200 hrs 7/03/84 - Diesel Generator 1B was restarted and loaded to 7000 KW.

As of 1200 hours on 7/03/84, Diesel Generator 1B has 616 hours of documented
run time. Of this time, approximately 60% has been at 7000 KW (100%).

NUCLEAR PRODUCTION MAINTENANCE

TECHNICAL DOCUMENT LIST

#1	March 14, 1984	Duke Power Company Dr. Clifford J. Wells, Vice President Failure Analysis Associates Scope of Nondestructive Testing for Catawba Nuclear Station Del. Aval. Standby Engines CN-204.00
#4	February 23, 1984	Failure Analysis Associates Eddy-Current Inspection Procedure for TDI 13x12 Crank Pin Fillets
#5	October 11, 1983	Failure Analysis Associates Liquid Penetrant Examination (PT) General Requirements
#6	November 2, 1983	Failure Analysis Associates Eddy-Current Inspection Procedure for Nodular Iron Piston-Skirts
#7	February 6, 1984	FaAA - Radiographic Examination of Diesel Engine Upper and Lower Bearing Shells
#8	October 12, 1983	FaAA - Liquid Penetrant Examination (PT) Color Contrast - Solvent Removable Method
#9	February 29, 1984	FaAA - Eddy-Current Inspection Procedure for Gray Cast Iron
#10	February 7, 1984	Failure Analysis Associates Eddy-Current Inspection of Diesel Engine Bearing Shells
#20	March 15, 1984	Significant Known Problems To: Jim Hampton
#21	March 6, 1984	G. W. Hallman, Manager Nuclear Maintenance Sub: Catawba Nuclear Station Diesel Engine Inspection Program Recommendation for Extent of Inspection
#26	January 17, 1984	NRC Meeting
#27	January 26, 1984	Duke Power Company Clint Mathews Don Bixby - TDI - CEO
#28		Requests for Additional Information Delaval Diesel Generator Evaluation
#29	March 21, 1984	Memorandum - Tim Ellis

#30	March 26, 1984	Comments
#32	March 27, 1984	Catawba Nuclear Station Diesel/Generator Task Force Meeting Agenda
#33	March 20, 1984	G. W. Hallman, Nuclear Production Attention: Whit Gallman EDG Air Start Valve Capscrew Dimension and Stress Analysis Report
#34	February, 1984	Calculation Sheet
#35	March 13, 1984	Commanche Peak Component Revalidation Check List
#38	March 13, 1984	Telecopy to Catawba - K. O. Patterson Catawba Nuclear Station - Transamerica Delaval
#39	March 19, 1984	Diesel Generator Failure Report of Kuo-Shens NPS Taiwan Power Company
#41		OP for Diesel Running
#42	January 4, 1984	Piston Cracking
#52	March 3, 1984	C. W. Hendricks - Personal Notes
#53	March 29, 1984	Whit Gallman - Personal Notes
#55	February 21, 1984	G. W. Grier Transamerica Delaval, Inc.
#59	March 2, 1984	Robert E. Gustafson Turbochargers
#62	March 8, 1984	Consultant's Notes Robert E. Gustafson Comment on EILCo
#64	March 13, 1984	Memorandum - R. Gustafson - R. P. Muschick
#68	March, 1984	Duke Power Company Catawba Nuclear Station
#69	February 16, 1984	Babcock-Wilcox Mr. C. W. Hendricks Duke Power Company
#70	March, 1984	Babcock-Wilcox
#71	January 31, 1984	Larry W. Sarver B & W Alliance Center Whit Gallman Duke Power Company Nuclear Production Dept.

#74	February 7, 1984	Diesel Mtg.
#80	March 9, 1984	Intrastation Letter Catawba Nuclear Station Diesel Generator 1A File No.: CN 204.00
#87	March 15, 1984	G. W. Hallman, Manager Nuclear Maintenance Testing of Catawba 1B Delaval Engines CN-204.00
#88	March 16, 1984	Catawba Diesel/Generator Task Force Status Report No. 4
#89	March 5, 1984	Catawba I Diesel/Generator Test
#90	March 9, 1984	G. W. Hallman J. W. Temple Catawba Nuclear Station D/G Engine Lube Oil System File: CN-301.00
#97	March 29, 1984	Russell P. Muschick - Personal Notes
#98	April 20, 1984	Dominion Engr. Trip Report Mike Partridge to Owners Group Headquarters
#99	May 10, 1984	Letter to C. J. Wylie from L. E. Suther, Jr. NSM Transmittal CN-10081 "Provide a New Turbocharger Dripline System"
#100	March 26, 1984	Letter to G. W. Grier et al. concerning a potential 10CFR21 problem with Turbocharger Thrust Bearing Lubrication
#101	May 30, 1984	Letter to Bob Johnstone of TDI from Mill-Power Supply Co. Subject: Cylinder Head Heat Treating, Request for Return Authorization.
#102	May 14, 1984	Memo to file Subject: Diesel Engine Turbochargers - Witnessed Disassembly. Author: J. E. Cooper, Design Electrical
#103	March 23, 1984	Western Union Telex to J. A. Gorman from S. R. Ward of Dominion Engineering. Subject: Changes to Catawba Inspection Procedures for Diesel Generator 1A.
#104	April 25, 1984	List of Unit 1B Diesel Engine Cylinder Head Heat Numbers by Gil Dorest

- #105 April 19, 1984 Letter to Dr. Lee Swanger of FaAA from Gerald F. Smith. Subject: Injector Spray Pressures and Patterns
- #106 April 19, 1984 Western Union Telex to Dave Heffner from Goerge Mattuizzi of TDI. Subject: Cylinder Head S/N's for Catawba Engines
- #107 March 29, 1984 Letter to G. W. Hallman from A. C. Barich of TDI answering questions about crankshafts and piston skirts
- #108 April 15, 1984 Duke Power QA Department
Nonconforming Item Reports: Serial No.'s
CN-026, CN-027, CN-047, CN-063, CN-065,
CN-066, CN-067, CN-069, CN-071, CN-075,
CN-078, CN-079, CN-080, CN-083
- #109 May 3, 1984 Handwritten note to Mike Hart. Title
"Preliminary 'As Found' Con Rod Box Bolt
Torques CNS 1-A"
- #110 May 1 and 2, 1984 Meeting Reports
Subject: Diesel Bearing Shells Radiographs
Author: J. A. Gorman
- #111 (Undated) "Comparison of Owners' Group and Catawba
Inspections for Generic and Specific Problem
Areas"
- #112 May 22 and 23, 1984 Trip Report by J. A. Gorman, Dominion
Engineering, to Failure Analysis Associates
Palo Alto, California
Purpose: "...to review the status of various
activities.....which impact the Catawba
Diesel Inspection"
- #113 May 29, 1984 Draft Version of "Torsiograph Test of
Emergency Diesel Generator 1A at Catawba
Nuclear Power Station" by FaAA
- #114 (Undated) Handwritten sheet titled "1A Generator Piston
Skirt History"
Author not shown
- #115 May 3, 1984 Letter to J. M. Curtis, QA, from G. W.
Hallman requesting on-site NDT of 17 New
Connecting Rod Bearing Shells
- #116 May 24, 1984 Letter to J. W. Hampton from G. W. Hallman
Subject: Temporary Changes to OP/1/A/6350/02
"Diesel Generator Operation" Recommended by
Delaval Until Cylinder Heads are Heat Treated

#117 April 4, 1984 List of Cylinder Head and Serial Numbers by G. Dorest, J. A. Simmons, H. L. Lipe

#118 June 5, 1984 Letter to A. C. Barich, TDI, from G. W. Hallman
Subject: "Cylinder Head Stud Installation on DSRV16-4 Engines Used at Catawba Nuclear Station"

#119 April 4, 1984 Letter to P. D. Stephenson, Mill-Power Supply, from C. W. Hendrix
Subject: Disposition of Cracked 1A-3L Cylinder Head and Injector Pump Valve Holder.

#120 May 11, 1984 Telex to George Mattiuzzi of TDI from T. R. Black Mill-Power
Subject: "Delivery Valve Holder and Fuel Oil Injection Pump"

#121 June 5, 1984 Letter to Bob Johnstone of TDI from G. W. Hallman
Subject: "Removal of Indication in CNS 1A Diesel Crankshaft Main Bearing No. 8 by Polishing"

#122 April 26, 1983 Memo to File "...to summarize the following items of interest concerning the rebuilding of Catawba Diesel 1B Engine:" by J. M. Lines

#123 February 22, 1983 "Duke Power Vendor Surveillance Report" (QA) by Mack D. Blackwell. Subject: Perform surveillance during the rework and testing of eleven piston skirts returned from Catawba site out of Engine 75018

#124 May 14, 1984 Letter to J. M. Lines from R. P. Muschick
Subject: Catawba 1A Diesel Inspections Part Identification and Classification

#125 May 18, 1984 Letter to L. C. Dail from G. W. Hallman
Subject: D/G On-Engine Piping Systems Review of Seismic and Structural Design

#126 May 25, 1984 Letter to Jim Green, MP&L Co., from Russel P. Muschick
Subject: Information for paper presented at Orlando Nuclear Power Systems Symposium

#128 May 17, 1984 Letter to G. W. Hallman from R. P. Muschick
Subject: Catawba Diesel 1A and 1B Inspection Recommendations

#129	March 28, 1984 through June 28, 1984	Personal Log of C. W. Hendrix, Jr.
#130	March 30, 1984 through June 28, 1984	Personal Log of W. W. Gallman
#131	June 1, 1984	Letter to John Akers from G. W. Hallman Subject: CNS Emergency Diesel Spare Parts Request for Additional Quality Assurance Records
#132	June 11, 1984	Letter to Wayne McDonald, Catawba QA, from G. W. Hallman Subject: Additional QA Requirements PT on Push Rods
#133	June 5, 1984	Letter to John Gee, TDI, from G. W. Hallman Subject: Reshotpeening of CNS 1A Crankshaft Fillet
#134	June 19, 1984	Letter to H. B. Tucker Subject: TDI QA Program, from G. W. Grier
#135	June 27, 1984	Letter to A. C. Barich, TDI, from G. W. Hallman Subject: Connecting Rod Box Bolt Preload Verification on DSRV16-4 Engines Used at Catawba Nuclear Station
#136	June 26, 1984	Letter to Laney Bisbee from C. W. Hendrix, Jr. Subject: Disposition of 1A Diesel Fuel Injection Valve Holders
#138	June 20, 1984	Letter to C. L. Ray, Owners Group, from G. W. Hallman Subject: Cylinder Head Stud Installation
#139	April 9, 1984	Memo to File by J. E. Cooper, III, Design Electrical Subject: Diesel Engine Turbochargers - Witnessed Disassembly
#140	June 19, 1984	Letter to T. C. Roberts from C. W. Hendrix, Jr. Subject: Additional QA Requirements for Transamerica Delaval Parts
#141	June 22, 1984	Letter to T. C. Roberts from C. W. Hendrix, Jr. Subject: Additional QA Requirements for Transamerica Delaval Parts

#142 June 26, 1984 Letter to T. C. Roberts from C. W. Hendrix, Jr.
Subject: Additional QA Requirements for Transamerica Delaval Parts

#143 May 10, 1984 Letter to E. M. Couch from J. D. Heffner
Subject: Unit 2B Cylinder Head Removal and Return for Heat Treating

#144 April 24, 1984 Letter to G. W. Hallman from C. J. Wylie
Subject: History and Disposition of Cylinder Heads

#145 March 29, 1984 Letter to H. B. Tucker from T. R. Black
Subject: Seeking position concerning destructive examination of cylinder head assembly

#146-156A Memos to File
Subject: Catawba Nuclear Station Diesel Generator Task Force Meeting Minutes Dated:
April 9, 1984, April 13, 1984, April 19, 1984, April 30, 1984, May 4, 1984, May 9, 1984, May 17, 1984, May 29, 1984, June 4, 1984, June 9, 1984, June 25, 1984, and June 27, 1984, respectively

#157 Daily Status Reports - a group of five dated: March 8, 1984, March 9, 1984, March 12, 1984, March 16, 1984, and March 23, 1984

#158 Catawba Nuclear Station Diesel 1A Inspection Status Reports Numbers 1 through 57
Dated: April 9, 1984 through June 28, 1984

#159 June 29, 1984 Cover Letter and Report "Failure Analysis Report Catawba Nuclear Diesels 1A and 1B" to G. W. Hallman from C. W. Hendrix, Jr.

#160 February 9, 1984 Miscellaneous photographs of inspected parts

#161 Undated TDI Owners' Group Recommendations for Catawba DG Inspections

#162 February 24, 1984 Letter from Don Gabriel to Robert Bagwell re: Fuel Pump Valve Holder

#163 February 24, 1984 Task Group Meeting Announcement

#164 Undated Synopsis of Meeting on Diesel Engine Disassembly for Piston Skirt Deficiency

#165	Undated	Scope of Metallurgical Evaluation of Catawba 1 Emergency Diesel Generator Fuel Pump Valve Holder
#166	February 16, 1984	Letter from L. W. Sarver to C. W. Hendrix re: Fuel Pump Valve Holder
#167	February 27, 1984	Letter from Don Gabriel to Robert Johnston re: Fuel Pump Valve Holder
#168	January 17, 1984	Memo from Robert Smith re: TDI 10CFR21 report on overspeed governor
#169	March 6, 1981	Letter from John Wilder to Mike Lines re: 10CFR21 Solution for Turbochargers
#170	Undated	Drafts of Significant Known Problems for TDI Diesels
#172	March 21-26	Personal notes - Wayne Hallman
#173	March 9, 1984	Operating History - Diesel 1A
#174	March 26, 1984	Memo to file from R. O. Sharpe-Duke March 21 Meeting with NRC - Slides
#175	February 13 - March 7, 1984	Diesel Generator Test Reports 1-18
#176	March 8, 9, 12, 16, 23, 1984	Diesel Generator Status Reports 1-5

NUCLEAR PRODUCTION MAINTENANCE

TDI OWNERS' GROUP DOCUMENT LIST

#1	August, 1983	Metallurgical Evaluation of Diesel Engine Push Rod Weld from Grand Gulf Nuc. Sta. Unit 1 Emergency Diesel (Generator Division I) Nuclear Plant Eng. Miss. Power & Light Company
#3	October 31, 1984	Analysis of Replacement Crankshafts for Emergency Diesel Generators - Shoreham Nuc. Power Station
#4	October 31, 1983	Emergency Diesel Generator Crankshaft Failure Investigation - Shoreham Nucl Power Station
#9	June, 1982	Performance of Standby Diesel Generator Grand Gulf Nuc. Sta. Unit 1
#18		Form - Catawba Nuclear Station Diesel Generator 1A Extended Run TP/1/B/1100/03 Vibration Sample Data Log
#19	February 23, 1984	Long Island Lighting Company TDI Diesel Generator Owner's Group Executive, Alternates and Site Representatives Owner Group DR/QR Procedures
#20	January 11, 1984	Long Island Lighting Company TDI Diesel Gen. Owner's Group Members Meeting
#21	December 21, 1983	TDI Owner's Group Approach to Diesel Generator Closure
#23	February 29, 1984	TDI Diesel Generators Owner's Group Program Plan
#24		TDI - Diesel Generators Owner's Group Program Plan - Appendices
#28	December 30, 1983	Long Island Light Company (SNPS-111325) Shoreham Nuc. Power Sta. Mr. J. P. McGaughy Miss. Power & Light (Grand Gulf Sta.)
#29	July 11, 1983	Diesel Generator Operational Review Program

#30	January 6, 1984	Long Island Lighting Company Mr. Harold R. Denton, Director Office of Nuc. Reactor Regulation U. S. Nuc. Regulatory Commission Shoreham Diesel Generator Recovery Program Summary - Shoreham Nuc. Power Station
#31	January 20, 1984	Long Island Lighting Company Mr. R. Muschick Duke Power Company - Catawba
#32	January, 1984	Grand Gulf Nuc. Station Unit 1 Interim Report on Division I and II TDI Diesel Generators
#33	February 4, 1984	Long Island Lighting Company Messrs. J. Lines/R. Muschick Duke Power Company - Catawba
#34	February 7, 1984	Long Island Lighting Company Diesel Generator Owner's Group Executives and Alternates NRC Meeting
#35	December 9, 1983	Technical Specifications
#36	January 25, 1984	Long Island Lighting Company TDI Engine Owner's Group Members
#37	February 13, 1984	Long Island Lighting Company TDI Diesel Generator Owner's Group Phase I Program (Known Problems)
#38	February 23, 1984	Long Island Lighting Company TDI Diesel Generator Owner's Group Owner Group DR/QR Procedures
#39	January 6, 1984	Long Island Lighting Company Mr. Harold R. Denton, Director Office of Nuc. Reactor Regulations Shoreham Die. Gen. Recovery Program Summary Shoreham Nuclear Power Station
#40	July 11, 1983	Diesel Generator Operations Review Program
#42	February 27, 1984	Long Island Lighting Company TDI Diesel Generator Owner's Group TDI Die. Gen. Owner's Group Program Plan Shoreham Nuc. Power Unit 1 W.O. 44430/48923
#47	February 28, 1984	Long Island Lighting Company Dr. H. R. Denton, Director - Office of Nuclear Rea. Reg. U.S. Nuc. Regulatory Commission

#48	February 27, 1984	Long Island Lighting Company Dr. H. R. Denton, Director - Office of Nuclear Rea. Reg. U.S. Nuc. Regulatory Commission
#49	March 14, 1984	Long Island Lighting Company Attention: Mr. W. Laity
#50	February 27, 1984	Long Island Lighting Company Dr. H. R. Denton, Director - Office of Nuclear Rea. Reg. U.S. Nuc. Regulatory Commission
#51	February 28, 1984	Dr. H. R. Denton, Director - Office of Nuclear Rea. Reg. U.S. Nuc. Regulatory Commission
#52	January 26, 1984	Owner's Agenda TDI Owner's Group Meeting with NRC
#53	March 15, 1984	Long Island Lighting Company TDI Diesel Gen. Owner's Group Executives and Alternates
#54	March 20, 1984	Long Island Lighting Company TDI Diesel Gen. Owner's Group Owner's Licensing Representatives - NRC Information Request
#55	November 4, 1983	M.P.L.C. - U. S. Nuc. Reg. Comm. Office of Nuc. Rea. Regulation Attention: Mr. Harold R. Denton, Director
#56	March 15, 1984	Long Island Lighting Company TDI Diesel Generator Owner's Group Executives and Alternates
#57	February 22, 1984	TDI Recommendations for Catawba D6 Inspections
#58	February 7, 1984	Long Island Lighting Company Diesel Generator Owner's Group Executives and Alternates W. F. Museler (LILO)/w. Angle (MPEL) NRC Meeting
#59	February 17, 1984	TDI Owner's Group Executives, Alternates and Site Representatives NRC Developments
#60	March 28, 1984	Catawba Nuclear Station - Diesel/Generator Contentions Intervenor Interrogatories Discovery Process
#62		TDI Diesel Generators Owner's Group Program Plan

#64	March 15, 1984	Long Island Light Company TDI Diesel Generator Owner's Group Executives and Alternates TDI Diesel Gen. Owner's Group Airstart Valve Capscrew Report
#66		Owner's Group - Bob Gill, Duke
#68	March 22, 1984	Long Island Lighting Company TDI Diesel Gen. Owner's Group Executives and Alternates TDI Diesel Gen. Owner's Group Cylinder Head Stud Stress Analysis
#74		TDI Diesel Generators Owner's Group Program Plan
#75		TDI Diesel Generators Owner's Group Program Plan
#76		Metallurgical Evaluation of Diesel Engine Push Rod Weld from Grand Gulf Nuclear Station Unit 1 - August, 1983
#77-130		Component Revalidation Checklist Task Description Nos. QR-10-02-305A through QR-10-MPO 22/3 For Texas Utilities
#131		Owners' Group Report Supplement Titled "Cylinder Heads"
#132	May 14, 1984	"Evaluation of Cylinder Heads of Transamerica Delaval, Inc. Series R-4 Diesel Engines
#133	May 14, 1984	"Design Review of Elliott Model 90G Turbocharger Used on Transamerica Delaval DSR-48 and DSRV-16 Emergency Diesel Generator Sets"
#134	June 1, 1984	"Owners' Group Executive Committee Meeting May 30, 1984 - Oakland, California - Minutes of Meeting"
#135	June 8, 1984	Letter to C. L. Ray from G. W. Hallman transmitting internal lube oil piping and support isometric drawings
#136	April, 1984	"Design Review of Push Rods for Transamerica Delaval Diesel Generators"

#137 May 29, 1984

Draft Copy of "Torsiograph Test of Emergency Diesel Generator 1A at Catawba Nuclear Power Station"

#138 April 9, 1984

Lilco Letter to NRC providing transcript references with answers to piston skirt questions

DESIGN ENGINEERING
TECHNICAL DOCUMENT LIST

January 18, 1980	Laboratory Certificate Anamet Laboratories Connecting Rod Forging Correspondence; Response to NRC Question 12
January 18, 1980	Laboratory Certificate Anamet Laboratories Crankshaft Forging Correspondence; Response to NRC Question 12
February 29, 1980	Request from TDI - Evaluation of Impact Test Requirements Correspondence; Response to NRC Question 12
August 21, 1980	Letter from C. J. Wylie to John Gee Re February 29, 1980 Letter
October 31, 1980	Letter from C. J. Wyle to John Gee Re August 21, 1980 Letter
February 10, 1981	Memo to File - Decision on Evaluation of Impact Test. Correspondence; Response to NRC Question 12
November 4, 1983	Mississippi Power & Light Grand Gulf Nuclear Station Response to GGNS Diesel Generator - NRC Request For Additional Information
November 17, 1983	Supplemental Information Concerning Transamerica Delaval (TDI) Emergency Diesel Generators, Board Notification 83-160A
June 27, 1983	Duke Power Company Catawba Nuclear Station Diesel Generator Preoperational Functional Test
May 31, 1984	Service Information Memo #364 From TDI Concerning Connecting Rod Wrist Pin Bushing
June 8, 1984	Telex from TDI - authorizing use of Helicoil repair kit on diesel generator 1A main bearing lube oil supply tube support bolt hole

June 8, 1984

Telex from TDI - acceptability of
spot face depth and piston crown
and skirt pilot diameters

June 22, 1984

Telex from TDI - authorizing use of
pistons which have 0.011 inch side
clearance in the number four
compression ring groove.

W. W. MCCOLLLOUGH - DIESEL GENERATOR DOCUMENTS
(FROM THE CATAWBA CITE)

DOCUMENT NUMBER	DATE	DESCRIPTION
1	7/6/83 3/19/84	Handwritten - TP/1/A/1100/02A D/G 1A Preoperational Functional Test - Logbook enteries
2	1/25/84 3/12/84	Handwritten - TP/1/B/1100/03 D/G 1A Extended run - logbook entries
3		Procedure TP/1/A/1400/07B D/G 1B Cooling Water System Cold Functional Test thru Change 1
4		Procedure TP/1/A/1700/01B D/G 1B Lube Oil System Cold Functional Test
5		Procedure TP/1/A/1350/25A D/G 1A Blackout and Load Rejection Preoperation Test
6		Procedure TP/1/A/1350/25B D/G 1B Blackout and Load Rejection Preoperational Test
7		Procedure TP/1/A/1550/01A D/G 1A FuelOil System Cold Functional Test
8		Procedure TP/1/B/1100/04 D/G 1B Extended Run
9		Procedure TP/1/B/1100/03 D/G 1A Extended Run (1 large package - numerous procedure attachments)
10		Procedure TP/1/A/1100/02A D/G 1A Preoperational Functional Test (1 large package - numerous procedure attachments changes 1 thru 12)
11		Procedure OP/1/A/6350/01 "Normal Power Checklist"
12		Procedure OP/1/A/6350/02 "D/G Operation"
13		Procedure OP/1/A/6350/05 "Alternate AC Power Sources"
14		Procedure OP/1/A/6350/06 "125 VDC Diesel Auxiliary Power"
15		Procedure OP/1/A/6450/19 "Cardox Fire Protection System"

16		Procedure OP/±/A/6550/01 "D/G Fuel Oil System Operation"
17		Procedure OP/1/A/6550/02 "D/G Lube Oil System:
18		Procedure OP/1/A/6500/05 "D/G Rooms Sump System"
19		Procedure TOI/A/A/6550/01M "Transferring D/G Fuel Oil Storage Tank Contents"
20		Procedure PT/1/A/4450/10B "Unit 1 D/G CO2 Weekly Test"
21	3/84	Numerous pages of D/G Operational Parameters
22		1 Large package of Instrument Calibration Checklists and Data Sheets
23	8/30/79	Memo to file from S. O. Addison, Jr., DPC re:D/G maintenance information
24	10/24/83	Letter from W. M. McCollough DPC - CNS to G. T. Smith DPC - CNS re: Diesel fuel line
25	12/7/83	Handwritten memo from R. McElwee to M. McCollough, CNS re: D/G turbocharger problem
26	12/7/83	Handwritten memo from R. McElwee to M. McCollough re: D/G 1b turbo
27	10/21/83	Handwritten memo from R. McElwee to G. T. Smith, CNS re: D/G fuel line (3 attachments - 1) 10/13/83 letter from J. M. Lines, DPC to J. W. Cox, DPC - CNS re: D/G fuel line break at Ground Gulf; 2) 9/30/83 letter from D. P. Wulf, TDI to W. T. Robertson, Mill Power re D/G fuel line; 3) 9/21/83 letter from R. E. Boyer, TDI to Director, OIE-NRC re: D/G fuel line)
28	11/15/83	Memo to file from M. D. Gilmore, DPC-CNS re: D/G initial runs
29	11/22/83	Letter from W. McCullough DPC - CNS to J. M. Lines, DPC re: D/G turbo lube oil drain

30	4/12/83	NCI-CN-029 from R. Ruth, DPC-AQ to J. W. Hampton, DPC - CNS re: D/G reassembly inspection
31		Miscellaneous handwritten notes of W. McCollough - 16 page
32	10/3/83	Letter from W. McCollough to C. L. Hartzell DPC - CNS re: D/G crankshaft failure; IEIN 83-58
33	11/8/83 - 12/11/83	Handwritten notes from that functional test - Maintenance Group Logbook
34		Operations Management Procedure 2-28 D/G Logbook
35		D/G/ 1A & 1B Logbook and Test Invalid Description Sheets (2 packages)
36	6/28/84	Memo to file from Dana Smith re: Operating Experience Update from 6/13/84 D/G 1B Extended Run Operating Experiences
37	6/13/84	Memo to File from Dana Smith re: Start attempt tally for 1A and 1B Diesel Generator
38	5/29/84 - 6/28/84	Performance Engineer's log book for D/G 1B Extended Run TP/1/B/1100/04
39	4/5/84 - 5/17/84	Maintenance Engineer's Log Book for 1A D/G Repair
40	4/3/84 - 6-28-84	Station Maintenance Support Supervisor's Shift Turnover Log

TDI OWNER'S GROUP REPORTS

<u>ITEM NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
1	May 16, 1984	Crankshafts at Grand Gulf - OGTP-30-0-9
2	April 27, 1984	Engine Base and Bearing Caps - OGTP-10
3	May 17, 1984	Connecting Rods for DSRV-4 Series Diesel Engines - OGTP-33-0-11
4	April 20, 1984	Fuel Oil Injection Tubing Qualification Analysis - TDIO-18
5	June 5, 1984	Grand Gulf Emergency Diesel Generator Aux. Module Control Wiring and Term. - OGTP-57
6	June 15, 1984	Supplement to Emergency Diesel Generator Engine Driven Jacket Water Pump - OGTP-75
7	June 14, 1984	The Influence of Thermal Distortion on the Fatigue Performance of AF and AE Piston Skirts - OGTP-72
8	May 24, 1984	Crankshafts at Shoreham and Grand Gulf Nuclear Power - OGTP-39
9	May 17, 1984	Connecting Rods for DSRV-4 - OGTP-33-0-11
10	May 24, 1984	Design Review of Connecting Rods for Transamerica Delaval DSRV-4 - OGTP-40
11	May 24, 1984	Investigation of Types AF and AE Piston Skirts - OGTP-41
13	June 15, 1984	Wiring and Termination Qualification Report for Catawba Nuclear Station Unit 1 - OGTP-74
14	June 13, 1984	Wiring and Termination Qualification Report for Comanche Peak Steam Electric Station - OGTP-70
15	June 15, 1984	Design Review of Elliot Model 65G Turbocharger used on DSRV-12-4 and DSRV-20-4 - OGTP-77
16	June 18, 1984	Engine Base and Bearing Caps for DSRV-16 Diesel Engine - OGTP-80

<u>ITEM NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
17	June 18, 1984	Design Review of TDI R-4 and RV-4 Series Cylinder Blocks and Liners - OGTP-78
18	June 15, 1984	Generator Crankshafts at Midland and San Onofre Nuclear Stations - OGTP-76
19	June 8, 1984	Supplement to Engine Driven Jacket Water Pump - OGTP-65
20	June 20, 1984	Answers to PNL letter dated June 4, 1984 - OGTP-85
21	June 25, 1984	Review of TDI R-4 Series - Cylinder Blocks and Liners - OGTP-90
22	June 18, 1984	Connecting Rods of TDI Inline DSR-48 - OGTP-79
23	June 22, 1984	Connecting Rod Bearing Shells for T/D Enterprise Engines - OGTP-89
25	May 17, 1984	Investigation of Types AF and AE Piston Skirts - OGTP-34-0-12
26	April 6, 1984	Supplement to Cylinder Head, Air Start Valve Capscrew Stress Analysis - TDIO-10
27	April 27, 1984	Fuel Oil Injection Tubing - OGTP-8
28	March 22, 1984	Cylinder Head Stud Stress Analysis - TDIO-8
29	April 27, 1984	TDI Inline model DSR-48 Connecting Rod Structural Integrity - OGTP-9
30	April 27, 1984	Engine Base and Bearing Caps for Inline DSR-48 Engines - OGTP-10
31	April 17, 1984	Emergency Diesel Generator Wiring and Terminations of Shorhan Nuclear Station - TDIO-16
32	April 25, 1984	Supplement to Rocker Arm Capscrew Stress Analysis - TDI-19
33	April 24, 1984	Emergency Diesel Generator Wiring and Terminations at Shorhan Nuclear Station - TDI-18
34	June 8, 1984	Supplement to Wiring and Termination Review at Catawba, Unit 1 - OGTP-64

<u>ITEM NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
35	April 9, 1984	Engine driven jacket water pumps Design Review - TDIO-11
36	June, 1984	Metallurgical Analysis of Catawba Injector Port Leak - FaAA-84-6-66
37	June, 1984	Metallurgical Evaluation of Eddy Current Indications Found on the DG1A - FaAA-84-6-63
38	April 30, 1984	Interum Reports on turbocharger cylinder head and cylinder liner

DISCOVERY MATERIAL BOARD NOTIFICATIONS

DATE	DESCRIPTION
10/21/83	Board Notification No. 83-160
10/25/83	Board Notification No. 83-147
11/17/83	Board Notification No. 83-160A
1/24/84	Board Notification No. 84-013
1/27/84	Board Notification No. 84-018
2/13/84	Board Notification No. 84-020
2/13/84	Board Notification No. 84-021
2/15/84	Board Notification No. 84-024
2/28/84	Board Notification No. 84-039
2/29/84	Board Notification No. 84-044
3/7/84	Board Notification No. 84-047
3/12/84	Board Notification No. 84-051
3/23/84	Board Notification No. 84-063
4/4/84	Board Notification No. 84-072
5/7/84	Board Notification No. 84-098
5/17/84	Board Notification No. 84-097
6/8/84	Board Notification No. 84-113

OTHER DISTRIBUTED DOCUMENTS

DATE	DESCRIPTION
12/1/83	Letter from T. M. Novak, NRC to C. Matthews, TDI
12/30/83	Letter from E. G. Adensam, NRC to H. B. Tucker
1/17/84	Notice of January 26, 1984 meeting
1/24/84	Notice of January 27, 1984 meeting between MP&L and NRC
2/2/84	Letter from C. H. Berlinger, NRC to J. P. McGaughy, MP&L
2/2/84	Meeting Summary for January 26, 1984 meeting
2/14/84	Letter from D. G. Eisenhut, NRC to D. Bixby, TDI
2/22/84	Letter from H. B. Tucker to H. R. Denton, NRC
2/27/84	Meeting Summary for February 10, 1984 meeting
2/27/84	Meeting Summary for February 16, 1984 meeting
2/28/84	Letter from C. Berlinger, NRC to W. Muselor, TDI OG
3/9/84	Notice of March 21, 1984 meeting between Duke & NRC
3/15/84	Letter from H. B. Tucker to J. P. O'Reilly, NRC
3/23/84	Letter from H. B. Tucker to J. P. O'Reilly, NRC
3/26/84	Letter from C. Berlinger, NRC, to J. P. McGaughy, TDI OG
4/11/84	Letter from C. Berlinger, NRC, to J. P. McGaughy, TDI OG
4/11/84	Meeting Summary for March 21, 1984 meeting
4/26/84	Letter from H. B. Tucker to J. P. O'Reilly, NRC
5/7/84	Letter from C. Berlinger, NRC, to J. P. McGaughy, TDI OG
6/1/84	Letter from H. B. Tucker to H. R. Denton, NRC
6/8/84	Letter from H. B. Tucker to H. R. Denton, NRC
6/29/84	Letter from H. B. Tucker to H. R. Denton, NRC

TDI OWNERS' GROUP

<u>Date</u>	<u>Description</u>
12/30/83	Letter (SNPS-11325) from W. J. Muselor to J. P. McGaughy
1/6/84	Meeting notes of R. Sharpe
2/20/84	Letter from J. P. McGaughy, MP&L to H. R. Denton Transmitting Grand Gulf Comprehensive Report
2/27/84	Letter (TDI-2) from W. J. Muselor, LILCo to H. R. Denton
2/28/84	Letter (TDI-1) from W. J. Muselor, LILCo to H. R. Denton
3/13/84	Meeting notice from J. P. McGaughy
3/14/84	Letter (TDI-6) from W. J. Muselor, LILCo to W. Larty, BPNL
3/15/84	Monthly Report (TDI 0-4) from W. J. Muselor, LILCo
3/20/84	Memo (TDI 0-6) from W. J. Muselor, LILCo
Undated	Phase I Generic Known Problems

Significant Deficiency Reports

Report Number (SD-413-414/ -)

80-03
81-05
81-19
81-29
82-14
82-20
82-26
82-27
83-12
84-03
(CA-84-15)

From 290.1's Determined Not Reportable

CA-81-37
82-04
82-06
83-19
83-28
83-36
83-40
84-10
84-18
84-19
84-20
84-25
84-26
84-27
84-28
84-29
84-30
84-39
84-42
84-43

IE Information Notice 83-58

Referenced Regulatory/Industry Documents

	<u>Description</u>
IEE 387-1977	IEE Standard Criteria for Diesel-Generator Units Applied as Standby Power Supplies for Nuclear Power Generating Stations
Regulatory Guide 1.9	Selection, Design, and Qualification of Diesel-Generator Units Used as Standby (Onsite) Electric Power Systems at Nuclear Power Plants
Regulatory Guide 1.32	Criteria for Safety-Related Electric Power Systems for Nuclear Power Plants
Regulatory Guide 1.108	Periodic Testing of Diesel Generator Units Used as Onsite Electric Power Systems at Nuclear Power Plants
Catawba Technical Specification 3/4.8.1	A. C. Sources
Catawba SER Section 8.3.1	A. C. Power Systems
NRC Standard Review Plan Section 8.3.1	A. C. Power Systems (Onsite)
Regulatory Guide 1.75	Physical Independence of Electrical Systems

MISCELLANEOUS OWNERS' GROUP DOCUMENTS

<u>ITEM NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
1	March 22, 1984	TDIO-8 - TDI Diesel Generator Owners' Group Cylinder Head Stud Stress Analysis
2	February 27, 1984	Investigation of Types AF and AE Piston Skirts - FaAA Report
3	March 12, 1984	Design Review of Connecting Rod Bearing Shells for Transamerica Delaval Enterprise Engines - FaAA Report
4	March 13, 1984	TDI Owners' Group Rocker Arm Capscrew Stress Analysis Report - Stone & Webster Report
5	March 15, 1984	TDI Owners' Group Air Start Valve Capscrew Dimension and Stress Analysis Report - Stone & Webster Report
6	March 14, 1984	TDI D/G Owners' Group Meeting
7	Undated	Compilation of Significant Known Problems
8	February 9, 1984	Memo from R. L. Gill transmitting Documents obtained at February 8 TDI Owners' Group Meeting
9	Undated	TDI Owners' Group Approach to Diesel Generator Closure
10	January 25, 1984	TDI Owners' Group - Proposed Framework for Responses to NRC Questions
11	February 17, 1984	LILCO Memo to Owners' Group re: Developments in Shoreham Licensing
12	December 22, 1983	Letter from J. P. McGouhy to T. Novak re: Organization of TDI Owners' Group
13	December 21, 1983	D/G Owners' Group Activities
14	February 13, 1984	TDI Owners' Group Memo on Phase I Program (Known Problems)
15	February 23, 1984	TDI Owners' Group Memo on Known Problems - Task Descriptions
16	February 23, 1984	TDI Owners' Group Memo on DR/QR Procedures

DUKE POWER VENDOR SURVEILLANCE
REPORTS ON TDI DIESEL ENGINE REPLACEMENT
PARTS AND SPARE PARTS

<u>ITEM NO.</u>	<u>DATE</u>	<u>DESCRIPTION</u>
1	June 30, 1982	Welding of pipe returned to TDI from Catawba.
2	July 26, 1982	Verification of repairs on 4 pieces of returned code piping.
3	February 22, 1983	Piston skirts returned from Catawba.
4	March 14, 1983	Witness MT of returned piston skirts.
5	May 19, 1983	Witness MT of returned piston skirts.
6	February 24, 1984	Routine surveillance on push rods and connecting rods prior to shipment.
7	February 24, 1984	Routine surveillance on turbocharger spare parts prior to shipment.
8	February 24, 1984	Routine surveillance on fastener spare parts prior to shipment.
9	March 28, 1984	Verification of proper repairs of turbochargers.
10	April 10, 1984	Define exact parameters used in repair of turbochargers.
11	May 23, 1984	Review of documentation of heat treating of cylinder skirts.
12	May 23, 1984	Perform surveillance on stud, injector nozzle holder parts prior to shipment.
13	June 29, 1984	Witness magnetic particle examination of piston skirts.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
DUKE POWER COMPANY, et al.) Docket Nos. 50-413
) 50-414
(Catawba Nuclear Station)
Units 1 and 2))

CERTIFICATE OF SERVICE

I hereby certify that additional attachments to "Applicants' Supplemental Response To 'Palmetto Alliance and Carolina Environmental Study Group's Interrogatories and Requests to Produce Documents On Diesel Generators Contentions To Applicants and NRC Staff' and 'CESG's Interrogatories To Duke Power Regarding Emergency Diesel Contentions Admitted By Atomic Safety and Licensing Board'" in the above captioned matter have been served upon the following by deposit in the United States mail this 6th day of July, 1984.

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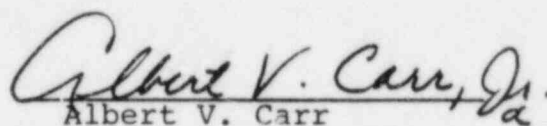
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