DIESEL GENERATOR COMPONENT
QUALITY REVALIDATION

COMPONENT: 03-31A Crankshaft and Flywheel
Crankshaft Timing Gear

QUALITY ASSURANCE INSPECTION PLAN

I.P. NO. 5

REV. 3

CHANGE 0

DG101

PREPARER: [signature] DATE: 3/3/84

REVIEWER: [signature] DATE: 3/5/84

APPROVAL: [signature] DATE: 3/5/84

C-8-2

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

NO	11600.37	03-310A	
SPEC	D.G. Inspect. 5 -	REV 3	CHG

TITLE Crankshaft & bearings: Crankshaft & turning gear

ITEM No	ATTRIBUTE	HOLD/ NOTIFY POINT	REFERENCE	DESCRIPTION / INSTRUCTIONS
			QR-1-03-310A QR-2 QR-3	TASK DESCRIPTION 1. Perform LP and Eddy current inspections of crankpin journal fillets numbers 5, 6, 7, 8 (governor and generator ends) Inspection following 100 hours full power operation. This test is to be done on each engine.

REMARKS

ACCEPTANCE INSPECTOR	DATE

C-8-3

11600.37	NO 03-310A
D.G. Inspect. 5-	REV 3

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

TITLE Crankshaft & bearings: Crankshaft & turning gear

ITEM No.	ATTRIBUTE	HOLD/NOTIFY POINT	REFERENCE	DESCRIPTION/INSTRUCTIONS
1			LILCO LP Procedure Fluorescent 6/3 R/1 TER #Q-91 & Q-100	. Liquid penetrant testing: perform liquid penetrant testing on no. 5, 6, 7 & 8 for D.G. 101 & 103 crankpin journal fillets (governor & generator ends) and record results. (Fluorescent) for each engine photographic record of results required. RESPONSIBILITY: Inspection Group/LILCO/FaAA to witness inspection
2			LILCO Eddy current procedure 11.6 TER #Q-100	. Eddy current examination: perform eddy current examination on no. 5, 6, 7 & 8 for D. G. 101 & 103 crankpin journal fillets (governor & generator ends) and record results (for each engine). RESPONSIBILITY: LILCO Q.A. interface/FaAA to witness inspections
3			QR-3 TER #Q-91	. Perform visual inspection of crankpin journal surface for signs of wear. Document with photographs on D.G. 101 & 103 #5, 7 & 8 RESPONSIBILITY: Inspection Group Note 1) inspection following 100 hours of [illegible] operation. Note 2) requires design group review forward data for review.
4			TER #Q-20	. Perform a visual inspection (using a mirror if necessary) of the crankshaft gear PC no. 02-310-01-0B RESPONSIBILITY: Inspection Group - D.G. 102 Note: pay particular attention of signs of wear, pitting, galling, chipping, cracking and/or breakage. Inspection to include pressure (drive) & backside of gear teeth at approx. 45° intervals around gear diameter = DG 102

REMARKS

QUALITY CONTROL INSPECTOR | DATE

C-8-4

INTER-OFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37 - 840321-1 thru 4 / 840320-1 thru 3
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s

MESSAGE:—

ENGINE - DG 101

ATTACHED PLEASE FIND 7 SATISFACTORY INSPECTION REPORTS GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

840321-4	Part # 03-340	B
840321-3	03-315	A
~~840321-2~~	~~03-310~~	~~A~~
840321-1	03-310	A
840320-3	03-310	A
840320-2	03-310	A
840320-1	03-310	A

RETURNED TO QAA for CORRECTION. TWH 3/23/84

3/23/84
DATE

R D Murray
SIGNATURE

TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS
J. F. KELLY LILCO FQA (NDE RELATED IR's ONLY) W/ATTACHMENTS.

DATE

SIGNATURE

TELEPHONE

A 040 136

READER DETACH AND RETAIN THIS COPY

C-8-5

SENDER — RETAIN YELLOW COPY
FORWARD WHITE AND PINK COPIES.

REPLIER — RETURN WHITE COPY
RETAIN PINK COPY FOR FILE.

INTEROFFICE CORRESPONDENCE

TO:	LOCATION	SUBJECT / REFERENCE / J.O. NO.
Ken Morrow		FaAA Report # 840321-1
FROM:	LOCATION	ET of DG 101 Crank pin Fillet #8
Don Johnson	FaAA	

MESSAGE: —

Attached is FaAA Report # 840321-1, Eddy Current examination of DG 101 Crank Pin Fillet #8.

No relevant indications were observed.

3/21/84
DATE

Don Johnson
SIGNATURE

582
TELEPHONE

REPLY:

DATE

SIGNATURE

TELEPHONE

▲ 040.138

C-8-6

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG-101 Job number 03310A

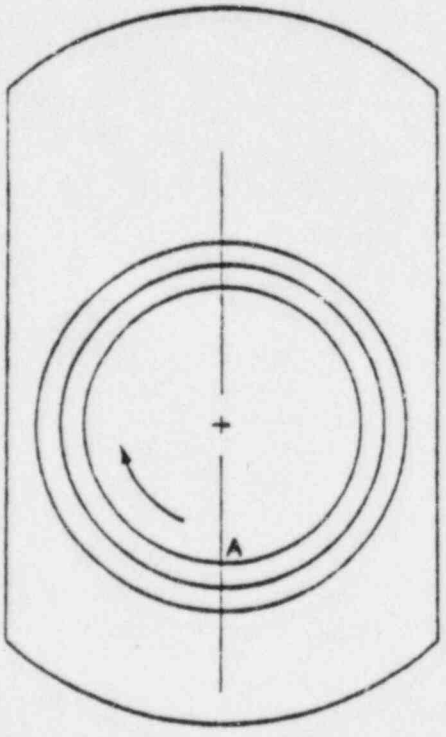
Rod journal number #8 Date 3-21-84

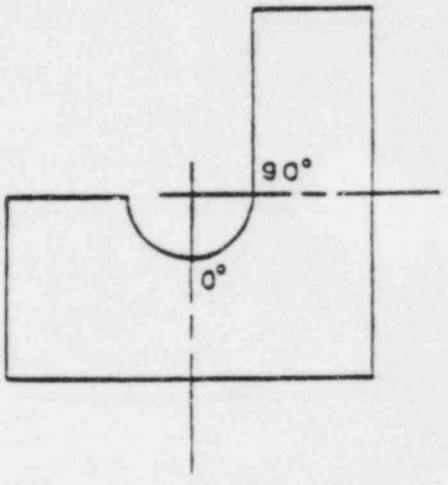
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 6" End 32"

Degree setting Start 0° End 80°
+90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Dan Johnson Level II

Examiner Dennis R Johnson Level III

F&AA-G-12-1

C-8-7

Associat

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3-21-89 Report No. 89 03 21 -1

Material Description DG 101 - CRANK PIN #3 0098

Code or Specification FAA-NDC-11.6 Lvl 2 Full On N/A Full Off N/A

Reference Standard PMC 7396-83121 Instrument MIZ-17 S/N B138617

Instrument

Freq. 2.0 MHz Gain 12 Volts/div .5 Phase 200

Test Probe FAA ECP-100 S/N 100P

Reference Probe FAA ECP-100 S/N 100P-1

CALIBRATION

____ units @ ____ L/O ____ units @ ____ L/O

____ units @ ____ L/O ____ units @ ____ L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mV/div	Sen 100 mV
Position @ Null Point .5 V	Position @ Null Point 0.5 V RIGHT
Chart Speed 25 mm/sec	

Calibration Check

Time	Phase	Gain	
9:17	200	12	START
10:14	200	12	END
10:20	200	19	START
10:44	200	19	END

Examiner R&D-KR-3 [signature] Level II Examiner Duane R. Fisher Level III

C-8-8

SENDER — RETAIN YELLOW COPY
FORWARD WHITE AND PINK COPIES.

REPLIER — RETURN WHITE COPY
RETAIN PINK COPY FOR FILE.

INTEROFFICE CORRESPONDENCE

TO:	LOCATION	SUBJECT / REFERENCE / J.O. NO.
Ken Morrow		FaAA Report # 840320-3
FROM:	LOCATION	
Don Johnson	FaAA	ET of DG 101 Crank Pin Fillet #7

MESSAGE: —

Attached is FaAA Report # 840320-3, Eddy Current Examination of DG 101 Crank Pin Fillet #7.

No relevant indications were observed.

3/21/84
DATE

Don Johnson
SIGNATURE

582
TELEPHONE

REPLY:

DATE

SIGNATURE

TELEPHONE

▲ 040.13R

C-8-9

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG-101 Job number 03310A

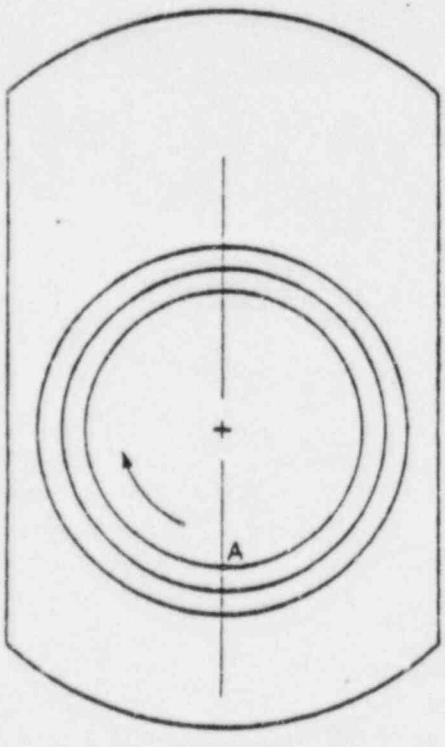
Rod journal number #7 Date 3-20-84

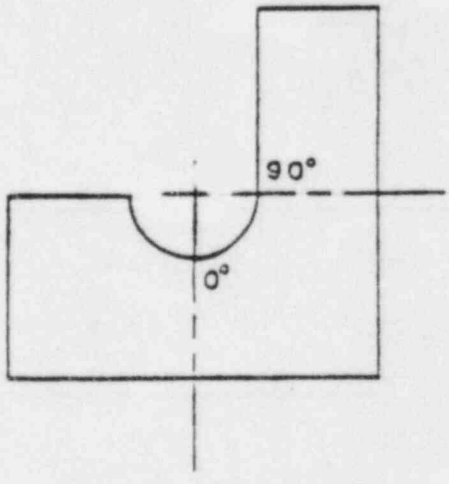
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATION

Fill out sketches below





Distance from A Start 5" Degree setting Start 0°

End 32" End 80°

±90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Dan Fahrner Level II

Examiner Duane P. Fahrner Level III

FsAA-G-12-1

C-8-10

Turbine Associat

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3-20-84 Report No. 84 03 20-3

Material Description DG 101 - CRANK PIN #7

Code or Specification FAA NDE 116 Rev 1 Full On N/A Full Off N/A

Reference Standard #0756-83121 Instrument NUZ 17 S/N 8133867

Instrument

Freq. 20 MHz Gain 12 Volts/div 0.5 Phase 196

Test Probe FAA ECP 100-P S/N 100P

Reference Probe FAA ECP 100-P S/N 100P-1

CALIBRATION

_____ units/@ _____ L/O

_____ units @ _____ L/O

_____ units/@ _____ L/O

_____ units @ _____ L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mV/DIV	Sen 100 mV/DIV
Position @ Null Point 0.0	Position @ Null Point 1.5V RT OF CTR
Chart Speed 25 mm/sec	

Calibration Check

Time 3:48 PM	Phase 196	Gain 12	START
Time 4:11 PM	Phase 196	Gain 12	
Time 5:03 PM	Phase 196	Gain 12	END
Time 5:05 PM	Phase 196	Gain 22	B GAIN
Time 5:24 PM	Phase 196	Gain 22	END
Time 5:27 PM	Phase 196	Gain 10	Coplilo Dyn.
Time 5:45 PM	Phase 196	Gain 10	END
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner R&D-KR-3 _____ Level II Examiner _____ Level III

C-8-11

SENDER — RETAIN YELLOW COPY
FORWARD WHITE AND PINK COPIES.

REPLIER — RETURN WHITE COPY
RETAIN PINK COPY FOR FILE.

INTEROFFICE CORRESPONDENCE

TO: Ken Morrow	LOCATION	SUBJECT / REFERENCE / J.O. NO. FaAA Report # 840320-2
FROM: Don Johnson	LOCATION FaAA	ET of DG 101 Crank Pin Fillet #5

MESSAGE —

Attached is FaAA Report # 840320-2, Eddy Current Examination of DG 101 Crank Pin Fillet #5.

No relevant indications were observed.

3/21/84
DATE

Don Johnson
SIGNATURE

582
TELEPHONE

REPLY:

DATE

SIGNATURE

TELEPHONE

A 040138

C-8-12

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG-101 Job number 03310A

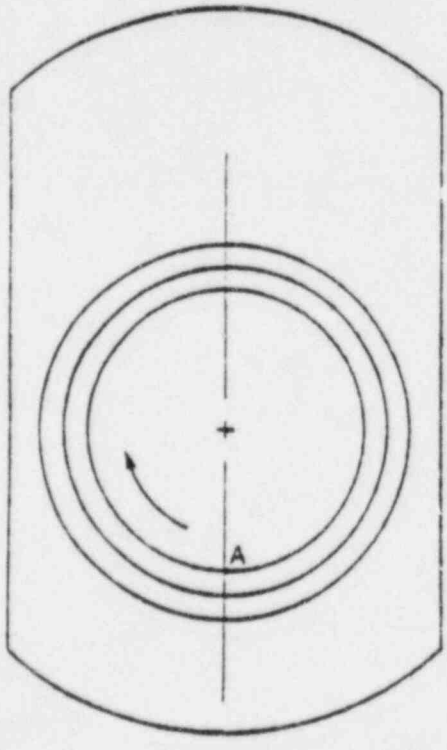
Rod journal number ~~#6~~ #5 Date 2-20-87

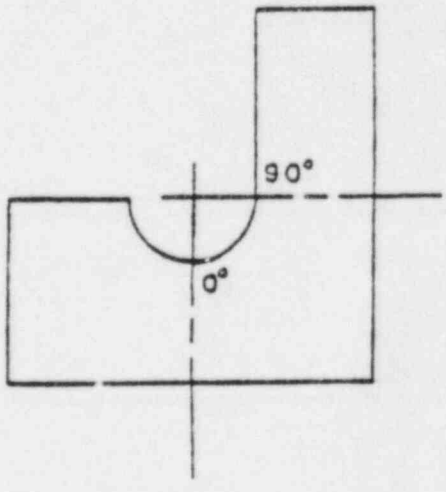
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5" Degree setting Start 0°

End 32" End 60°

90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner [signature] Level II

Examiner [signature] Level III

C-8-13

Associa

EDDY CURRENT CALIBRATION REPORT

Job No. 903310A Date 3/20/84 Report No. 84 03 20 -2

Material Description DG 101 - CRANK PIN #5

Code or Specification FAA-NDS-11.6 REV 1 Full On N/A Full Off N/A

Reference Standard PAO 7596 83121 Instrument MIZ 17 S/N B132867

Instrument

Freq. 2.0 MHz Gain 12 Volts/div 0.5 Phase 196

Test Probe FAA ECP-100P S/N 100P

Reference Probe FAA ECP-100P S/N 100P-1

CALIBRATION

units @ L/O

units @ L/O

units @ L/O

units @ L/O

STRIP CHART RECORDER

Type BRUSH S/N 7006

Channel 1	Channel 2
Sen 100 mV/div	Sen 100 mV/div
Position @ Null Point 0.0	Position @ Null Point 1.5 V @ 9 o'CT
Chart Speed 25 mm/sec	

Calibration Check

Time 2:34	Phase 196	Gain 12	START DGOV 0
Time 3:33	Phase 196	Gain END	GEN 0 - 2.0 DGOV 20 -
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner [signature] Level II Examiner [signature] Level III

R&D-KR-3

C-8-14

SENDER — RETAIN YELLOW COPY
FORWARD WHITE AND PINK COPIES.

REPLIER — RETURN WHITE COPY
RETAIN PINK COPY FOR FILE.

INTEROFFICE CORRESPONDENCE

TO:	LOCATION	SUBJECT / REFERENCE / J.O. NO.
Ken Morrow		FaAA Report # 840320-1
FROM:	LOCATION	
Don Johnson	FaAA	ET of DG 101 Crank Pin Fillet #6

MESSAGE: —

Attached is FaAA Report # 840320-1, Eddy Current Examination of DG 101 Crank Pin Fillet #6.

No relevant indications were observed.

3/21/84
DATE

Don Johnson
SIGNATURE

582
TELEPHONE

REPLY:

DATE

SIGNATURE

TELEPHONE

A 040.138

C-8-15

Recording form for crank pin fillet
Eddy-Current examination

Engine number FB DC. 101 Job number 0331-A

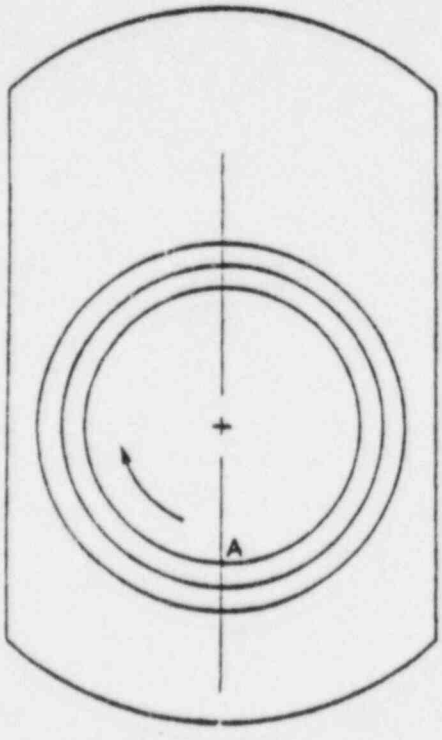
Rod journal number # 6 Date 3-20-84

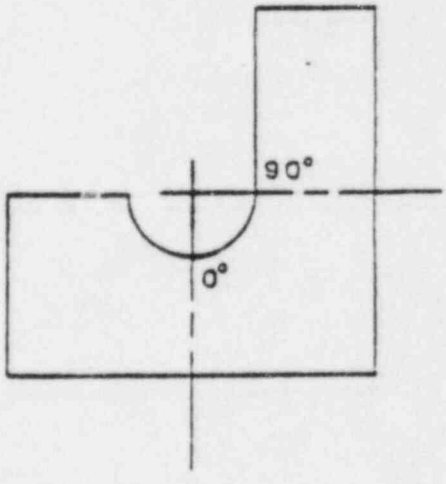
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5" Degree setting Start 0°

End 32" End 80°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Dan Johnson Level II

Examiner Duane B. Johnson Level Level III

FSAA-Q-12-1

C-8-16

.11.1.10

Mukuy:
Associa

EDDY CURRENT CALIBRATION REPORT

Job No. 03810A Date 3-20-84 Report No. 84 03 20-1
Material Description DG 101 - CRANK PIN #6
Code or Specification FAA-NDE-11.6 REV L Full On N/A Full Off N/A
Reference Standard PA07394-83121 Instrument MIZ-17 S/N B 133807

Instrument

Freq. 2.0 MHz Gain 12 Volts/div 0.5 Phase 196
Test Probe FAA ECP-100P S/N 100P
Reference Probe FAA ECP-100P S/N 100P-2

CALIBRATION

N units @ L/O
N units @ L/O

N units @ L/O
N units @ L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mV/div	Sen 100 mV/div
Position @ Null Point 0.0	Position @ Null Point 1.5 V DEFECT
Chart Speed 25 mm/sec	

Calibration Check

Time 1:00 PM	Phase 196	Gain 12	START B GAIN 0
Time 1:45 PM	Phase 196	Gain 12	B GAIN 89
Time 2:23 PM	Phase 196	Gain 12	END
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner [signature] Level II Examiner [signature] Level III
R&D-KR-3

C-8-17

INTEROFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37 DG # 101 03-310A
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s ATT # 3

MESSAGE: —

ATTACHED PLEASE FIND 1 SATISFACTORY INSPECTION REPORTS CONDUCTED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

3/21/84 — DATE

R D Murray — SIGNATURE

962 — TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY) ✓
G. ROGERS DRG W/ ATTACHMENTS ✓
~~J. F. KELLY ILCO PQA (NDE RELATED IR's ONLY) W/ATTACHMENTS.~~ N/A (VISUAL)

DATE — SIGNATURE — TELEPHONE

A 340 118

SENDER DETACH AND RETAIN THIS COPY

C-8-18

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY CONTROL INSPECTION REPORT

JOB NUMBER	DATE
11600.37	3/21/94

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: Crankshaft & Bearings: Crankshaft & Turning Gear COMPONENT NO. 03-310A	DG- 101	I.P. NO. 1 REV. 3 CHG 0 TER # N/ LILCO LP PROC. ____ REV. ____ DWG. NO. A

DWG NO OR P O	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	3	3	Performed a VISUAL INSPECTION OF CRANKPIN JOURNAL SURFACE. NO VISUAL SIGNS WERE NOTED. SEE ATTACHED PHOTOGRAPHS.

M&TE NO. _____, _____, _____, _____, _____, _____, _____, _____

REVIEWED: N.E. [signature] 3/21/94

QUALITY CONTROL INSPEC./ENG. [signature] DATE 3/21/94 PAGE 1 OF 1

C-8-19

INTEROFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. DG 101 11600.37 03.310A
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s DTT 1

MESSAGE:—

ATTACHED PLEASE FIND 1 SATISFACTORY INSPECTION REPORTS GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

3-22-84
DATE

R D Murray
SIGNATURE

TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS
J. E. KELLY LILCO FQA (NDE RELATED IR's ONLY) W/ATTACHMENTS.

DATE

SIGNATURE

TELEPHONE

A ONE 170

SENDER DETACH AND RETAIN THIS COPY

C-8-20

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY CONTROL INSPECTION REPORT

JOB NUMBER	DATE
11600.37	3-21-84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: Crankshaft and Bearings Crankshaft and Turning gear	DG- 101	I.P. NO. 5 REV. 3 CHG 0 TER # Q91, Q100 LILCO LP PROC. 63 REV. 1
COMPONENT NO. 03-310A		DWG. NO. N/A

DWG. NO. OR P.O.	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	1	2	Performed LP exam on Crank Pin Journal fillets (governor and generator ends) on cylinders # 7 + 8. SAT Non Relavent Indications Found

M&TE NO. _____, _____, _____, _____

_____, _____, _____, _____

	QUALITY CONTROL INSPEC./ENG.	DATE	PAGE
3-21-84	[illegible] John Wyatt	3-21-84	1 OF 2

C-8-21

LIQUID PENETRANT EXAMINATION REPORT

Page 2 of 2

PT

A. MATERIAL: Carbon Steel	TYPE	FABRICATED PROCESS	☐ WELDED ☑ CAST ☐ WORKED
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☑ OTHER:
CROSS SECTION THICKNESS: MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☑ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER

COMPONENT I.D. Crankshaft #3 Bearing Journal Crankshaft #3 Journal Fillets

B. NDE PROCEDURE No. 6.3	SURFACE/MAT'L. TEMP. 77°	MATE. NO. 7 11 701	MWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	MagnaFlux	SKC-NF/ZC-7A	84A028
2. PENETRANT	MagnaFlux	ZL-22A	83F003
3. EMULSIFIER AND/OR REMOVER	MagnaFlux	SKC-NF/ZC-7B	84A028
4. DEVELOPER	MagnaFlux	SKD-NF/ZP-9B	83H041
5. POST EXAMINATION CLEANER	MagnaFlux	SKC-NF/ZC-7B	84A028

SYSTEM R-43

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

#7 And #8 crankpin-journal Fillets (governor and generator ends)

Non Relavent Indications Found

* Nelson Columbia LIII PT files 3-21-84

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1			
2			
3			
4			

PLANT/LOCATION DCC101

D. ACCEPTANCE CRITERIA	#2	OPERATOR John Dyrdek Jr. Level II Date 3-21-84

E. ATTEST: John Dyrdek Jr. (RESPONSIBLE CERTIFIED PERSONNEL) — II (LEVEL) — 3-21-84 (DATE)

C-8-22

INTEROFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. DS 101 11600.37 03.31 A TRANSMITTAL OF SAT I.R.'s APT 1
FROM: R. MURRAY	LOCATION QEG	

MESSAGE:—

ATTACHED PLEASE FIND 1 SATISFACTORY INSPECTION REPORTS GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

3-22-84
DATE

R D Murray
SIGNATURE

TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS
J. E. KELLY LILCO FQA (NDE RELATED IR's ONLY) W/ATTACHMENTS.

DATE

SIGNATURE

TELEPHONE

SENDER DETACH AND RETAIN THIS COPY

C-8-23

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY CONTROL
INSPECTION REPORT

JOB NUMBER	DATE
11600.37	3-21-84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: Crankshaft and Bearings, Crankshaft and Turning Gear COMPONENT NO. 03-310A	DG-101	I.P. NO. 5 REV. 3 CHG 0 TER # Q91, Q100 LILCO LP PROC. 63 REV. 1 DWG. NO. N/A

DWG NO OR P.O.	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	1	2	Performed LP exam on crankpin journal fillets (governor and generator ends) on cylinders #5 & #6 SAT Non Relevant Indications Found

WELD NO. _____, _____, _____, _____, _____, _____, _____, _____

R R Bunge 3-21-84 | QUALITY CONTROL INSPECTOR | Reviewed & Accepted | DATE 3-21-84 | PAGE 1 OF 2

C-8-24

LILCO

LIQUID PENETRANT EXAMINATION REPORT

Page 2 of 2

PT

A. MATERIAL: Carbon Steel	TYPE N/A	FABRICATED PROCESS	☐ WELDED ☒ CAST ☐ WORKED	
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD ☒ OTHER:		
CROSS SECTION THICKNESS: MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER	

COMPONENT I.D. 03-310A (Crankshaft & Bearings Crankshaft journal grus)

B. NDE PROCEDURE No. 63	SURFACE/MAT'L. TEMP. 78°F	MATE. NO. 711-708	MWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	Magnaflux	SKC-NF/ZC-7B	84A028
2. PENETRANT	Magnaflux	ZL 22A	83F003
3. EMULSIFIER AND/OR REMOVER	Magnaflux	SKC-NF/ZC-7B	84A028
4. DEVELOPER	Magnaflux	SKD-NF/ZP4B	83H041
5. POST EXAMINATION CLEANER	Magnaflux	SKC-NF/ZC-7B	84A028

SYSTEM R-43

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

#5 & #6 Crankpin journal fillets

(governor & generator ends)

Non Relevant Indications Found

M. C. Amini Level III PT. Lilco 3-21-84

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1			
2			
3			
4			

PLANT/LOCATION DG-101

D. ACCEPTANCE CRITERIA	4.2	OPERATOR Lee Bertram, Rodney S Bonner Level II Date 3-21-84

E. ATTEST	Lee Bertram Rodney S Bonner	II	3-21-84
	RESPONSIBLE CERTIFIED PERSONNEL	LEVEL	DATE

C-8-25

DIESEL GENERATOR COMPONENT QUALITY REVALIDATION

COMPONENT: C3-210A- CRANKSHAFT AND BEARINGS.
CRANKSHAFT PLUG THRUST FACE

QUALITY ASSURANCE INSPECTION PLAN

I.P. NO. DS INSP 55

REV. 2

CHANGE —

PREPARER: [signature] DATE: 2/24/94

REVIEWER: [signature] DATE: 2/24/94

APPROVAL: [signature] DATE: 2/24/94

C-8-26

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

	NO		
[illegible]	[illegible]		
NO [illegible] 5		REV 2	CHG 0

TITLE CRANKSHAFT & BEARINGS: CRANKSHAFT & TURNING GEAR

ITEM No	ATTRIBUTE	HOLD/ NOTIF POINT	REFERENCE	DESCRIPTION / INSTRUCTIONS
1			QCI.FSI.F11.1-040	TASK DESCRIPTION: ASSEMBLE AND REVIEW EXISTING DOCUMENTATION. PERFORM LP AND EDDY CURRENT INSPECTIONS OF CRANKPIN JOURNAL FILLETS NUMBERS 5, 7, 8. (GOVERNOR AND GENERATOR ENDS) INSPECTION FOLLOWING 100 HOURS FULL POWER OPERATION. THIS TEST IS TO BE DONE ON EACH ENGINE. RESPONSIBILITY: DOCUMENT GROUP ATTRIBUTE TO BE VERIFIED: QUALITY STATUS OF COMPONENT DOCUMENT PACKAGE & VENDOR QUALITY RATING. . REVIEW COMPONENT DOCUMENT PACKAGE IN ACCORDANCE WITH THE REQUIREMENTS OF QCI FSI F11.1040 . VENDOR QUALITY RATING, STONE & WEBSTER QUALITY RATING LIST, LILCO QUALITY RATING LIST, CASE REGISTER.
2			LILCO LP PROCEDURE FLUORESCENT 6/3 R/1	RESPONSIBILITY: INSPECTION GROUP LIQUID PENETRANT TESTING: PERFORM LIQUID PENETRANT TESTING ON NO. 5, 7, & 8 CRANKPIN JOURNAL FILLETS (COVERNOR & GENERATOR ENDS) AND RECORD RESULTS. (FLUORESCENT) FOR EACH ENGINE PHOTOGRAPHIC RECORD OF RESULTS REQUIRED.
3			LILCO EDDY CURRENT PROCEDURE 11.6	EDDY CURRENT EXAMINATION: PERFORM EDDY CURRENT EXAMINATION ON NO. 5, 7, & 8 CRANK PIN JOURNAL FILLETS (GOVERNOR & GENERATOR ENDS) AND RECORD RESULTS. (FOR EACH ENGINE) RESPONSIBILITY: FAA

REV 2

REV 2

REMARKS NOTE: ALL DATA & INSPECTION FINDINGS TO BE FORWARDED TO DIESEL QUALITY VALIDATION ENGINEERING GROUP.

QUALITY CONTROL INSPECTION	DATE

12-9-82

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

	1160X . 7	NO	02-310A
NO	1-G JAF - 5	REV 2	CHG 0

TITLE CRANKSHAFT AND BEARINGS CRANKSHAFT AND TURNING GEAR

ITEM NO	ATTRIBUTE	HOLD/NOTIF POINT	REFERENCE	DESCRIPTION/INSTRUCTIONS
4				PERFORM VISUAL INSPECTION OF CRANKPIN JOURNAL SURFACE FOR SIGNS OF WEAR. DOCUMENT WITH PHOTOGRAPHS. RESPONSIBILITY: INSPECTION GROUP. NOTE 1) INSPECTION FOLLOWING 100 HOURS OF 100% OPERATION. NOTE 2) REQUIRES DESIGN GROUP REVIEW FORWARD DATA FOR REVIEW.
5				RESPONSIBILITY: INSPECTION GROUP - DG 102 _ . PERFORM A VISUAL INSPECTION (USING A MIRROR IF NECESSARY) OF THE CRANKSHAFT GEAR PC NO. 02-310-01-0B NOTE: PAY PARTICULAR ATTENTION OF SIGNS OF WEAR, PITTING, GALLING, CHIPPING, CRACKING AND/OR BREAKAGE. INSPECTION TO INCLUDE PRESSURE (DRIVE) & BACKSIDE OF GEAR TEETH AT APPROX 45° INTERVALS AROUND GEAR DIAMETER - DG 102 - ATTRIBUTE # 5 AUTHORIZED VIA TER # Q 20 DATED 2/16/84 ATTRIBUTE # 3 AUTHORIZED VIA TER # DR 2 DATED 1/20/84 ATTRIBUTE # 4 AUTHORIZED VIA CRC # QR 3 DATED 2/10/84 ATTRIBUTE # 2 AUTHORIZED VIA TER # Q15 DATED 2/17/84

REV 2

REMARKS

TER Q20 SUPERCEDES TER #DR 159

QUALITY CONTROL INSPECTION	DATE

C-8-28

INTEROFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s

MESSAGE: —

ATTACHED PLEASE FIND 2 SATISFACTORY INSPECTION REPORTS GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

2/27/84
DATE

R. D. Murray
SIGNATURE

TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS FAAA W/ ATTACHMENTS
J. KAMMEYER SEO W/ ATTACHMENTS
E. YOUNGLING LSU W/ ATTACHMENTS

DATE

SIGNATURE

TELEPHONE

A 046 138

SENDER DETACH AND RETAIN THIS COPY

C-8-29

STONE & WEBSTER ENGINEER...G CORPORATION

...ALITY CONTROL
SPECTION REPORT

JOB NUMBER	DATE
11600.27	2/13/84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
D 3-310 A CCRANKSHAFT & BEARING - CRANK - SHAFT & TURNING GEAR -) EQ 4/2/84	DG-102	DG. INSP - 5 REV. 0, CH. 0 GMD 2/2 FAA-NDE-11.6 REV 0

ITEM NO	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	3	1	PERFORMED EDDY CURRENT EXAMINATION ON NO 5, 6, 7, 8 CRANK PIN JOURNAL FILLETS (GOVERNOR + GENERATOR ENDS). NO RELEVANT INDICATIONS FOUND.

GARY
X 7L-582

ORIGINAL LOST THIS IS NOW THE ORIGINAL

2/20/84

QUALITY CONTROL INSPEC./ENG	DATE	PAGE
Dana B. Johnson	2-13-84	1 OF 9

C-8-30

Eddy-Current examination

~~243~~
249

Engine number DG-102 Job number PAA-7376

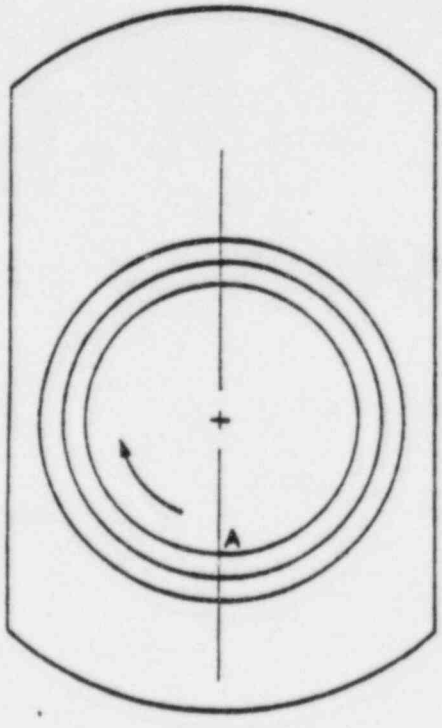
Rod journal number #5 Date 2/11/84 - 2/12/84

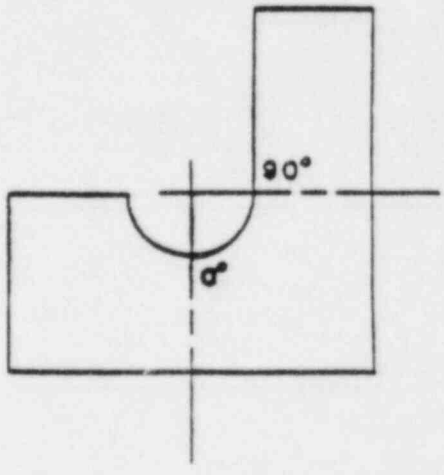
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 6" Degree setting Start 0°

End 32" End 80°

Magnitude of indication ALSO 90°

Channel 1 N/A

Channel 2 N/A

Examiner Don O Johnson Level II

Examiner Dave Oglesbee Level III

FaAA-G-12-1

C-8-31

EDDY CURRENT CALIBRATION REPORT

3971 Associate

Job No. PAO 7396 Date 2-11-84 Report No. 2007 84102

Material Description DG-102 CRANK PIN FILLETS 2007 #5

Code or Specification NDE-11.6 REV O Full On N/A Full Off N/A

Reference Standard PAO-7396-8312 Instrument MIZ-17 S/N B133861

Instrument

Freq. 2 MHZ Gain 17 Volts/div 0.5 Phase 210

Test Probe FAA-ECP-100-P S/N 100-P

Reference Probe FAA-ECP-100-P S/N 100-P-I

CALIBRATION

N/A units @ _____ L/O _____ units @ _____ L/O

_____ units @ _____ L/O _____ units @ _____ L/O

STRIP CHART RECORDER

Type ~~50 mV/DIV~~ 2007 BRUSH 220 S/N 0007006

Channel 1	Channel 2
Sen 50 mV/DIV	Sen 100 mV/DIV
Position @ Null Point CTR	Position @ Null Point 1.5 V RT CTR
Chart Speed 25 mm/sec	

Calibration Check

Time 23:45	Phase 210	Gain 17	START	60-90°
Time 0:42	Phase 210	Gain 17		60 29°
Time 1:40	Phase 210	Gain 17		60 72°
Time 2:40	Phase out of Calibration	Gain		
Time 3:20	Phase 210	Gain 17		60 72°
Time 4:08	Phase 210	Gain 17		GE 60°
Time 4:53	Phase 210	Gain 17		~~END~~ END OF INSPEC
Time	Phase	Gain		
Time	Phase	Gain		
Time	Phase	Gain		

Examiner R&D-KR-3 [signature] Level II Examiner Duane O. Johnson Level III

C-8-32

Eddy-Current examination

Engine number DG 102 Job number PAO 7396

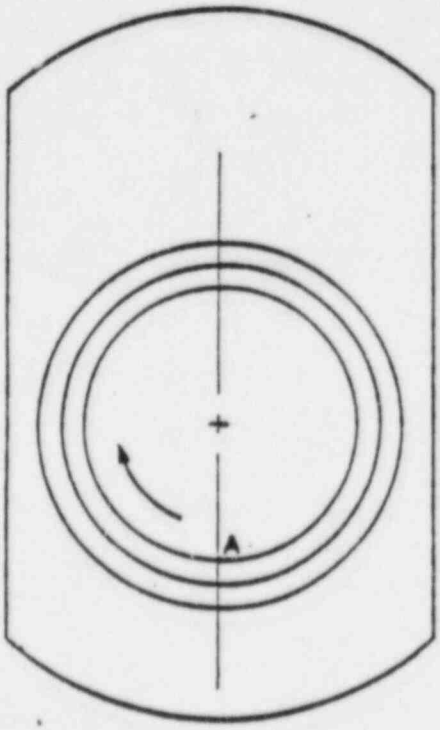
Rod journal number 6 Date 2-13-84

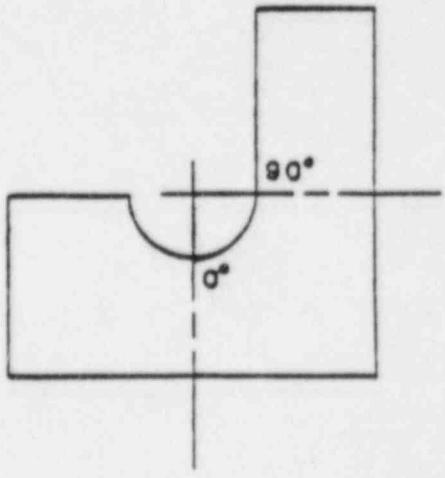
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATION

Fill out sketches below





Distance from A Start 6" Degree setting Start 0°

End 32" End 80°

Also 90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Dwight Johnson Level II

Examiner Duane O. Johnson Level III

F&AA-G-12-1

C-8-33

77' Associat

EDDY CURRENT CALIBRATION REPORT

Job No. PPO 7396 Date 2-12-84 Report No. 841202-J 84130E DP5

Material Description DG 102 CRANK PIN FILLETS #6

Code or Specification NDE 11.6 REV 0 Full On N/A Full Off N/A

Reference Standard PPO 7396 83121 Instrument M12-17 S/N B13386J

Instrument

Freq. 2 MHz Gain _____ Volts/div 0.5 Phase _____

Test Probe FAA ECP-100-P S/N 100 P

Reference Probe FAA ECP-100-P S/N 100-P-1

CALIBRATION

N/A units @ _____ L/O _____ units @ _____ L/O

_____ units @ _____ L/O _____ units @ _____ L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 0007006

Channel 1	Channel 2
Sen 50 mV/DIV	Sen 100 mV/DIV
Position @ Null Point CTR	Position @ Null Point LS VAT CTR
Chart Speed 25 mm/sec	

Calibration Check

Time 23:32	Phase 199°	Gain 14	60 0°B	
Time 00:12	Phase 199°	Gain 14	6E 0°B	
Time 00:40	Phase 199°	Gain 14	60 0°D	
Time ~~_____~~	Phase ~~_____~~	Gain ~~_____~~	~~6E 0°B~~ DP1	
Time 01:10	Phase 199°	Gain _____	END	
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		

Examiner Dan D Johnson Level II Examiner Duane D Johnson Level ___

8D-KR-3

C-8-34

Eddy-Current examination

697

Engine number DC-102 Job number PAO-7396

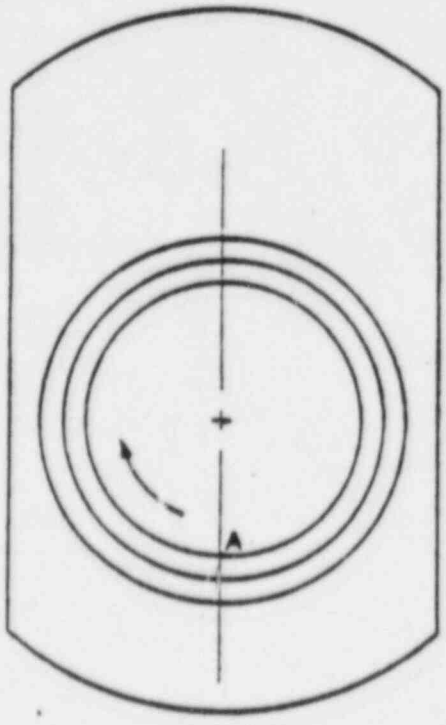
Rod journal number #7 Date 2/12/84

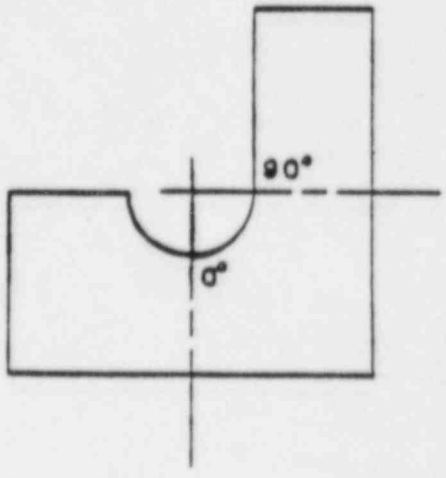
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 6"

End 32"

Degree setting Start 0°

End 80°

ALSO 90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Don E. Johnson Level II

Examiner Dean P. Johnson Level ~~II~~ III

DBJ

F&AA-Q-12-1

C-8-35

21.1.10

~~2/82-2009~~ Analyst
7/91 Associat

EDDY CURRENT CALIBRATION REPORT

Job No. PAD 7396 Date 2-12-84 Report No. 841202-1
Material Description TDI 13x12 CRANK PW FILLETS @ #7 PG 102
Code or Specification NDE 11.6 REV.0 Full On N/A Full Off N/A
Reference Standard PAD-7396-83121 Instrument MIZ-17 S/N 6133867

Instrument

Freq. 2 mHz Gain 17 Volts/div 0.5 Phase 210
Test Probe FoAA-ECP-100-1 S/N 100-P
Reference Probe FoAA-ECP-100-1 S/N 100-P-1

CALIBRATION

N/A units @ _____ L/O _____ units @ _____ L/O
_____ units @ _____ L/O _____ units @ _____ L/O

STRIP CHART RECORDER

Type Gould Brush 220 S/N 000700

Channel 1	Channel 2
Sen 50 mV/DIV	Sen 100 mV/DIV
Position @ Null Point CTR	Position @ Null Point 1.5 V RT CTR

Chart Speed 2.5 mm/sec

Calibration Check PIN #7 START

Time 13:40	Phase 201	Gain 16	#760	0°
Time 14:20	Phase 201	Gain 16	#760	
Time 15:30	Phase 201	Gain 16	#76E	0°
Time 16:31	Phase 201	Gain 16	#76E	36°
Time 16:49	Phase 201	Gain 16	END	
Time _____	Phase ~~#7 GAIN~~ FINISH	Gain PIN		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		
Time _____	Phase _____	Gain _____		

Examiner Dan Dyfalla — Level II Examiner Duane B. Johnson Level III
R&D-KR-3

C-8-36

Eddy-Current examination

Engine number DG 102 — Job number PAO-7396

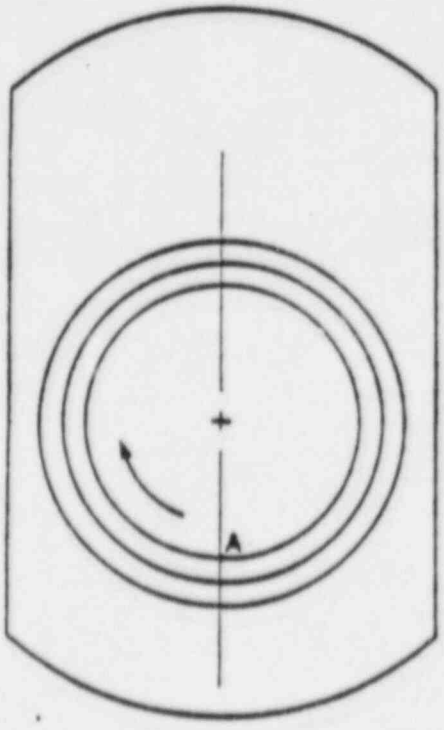
Rod journal number 8 OFF — Date 12-2-84

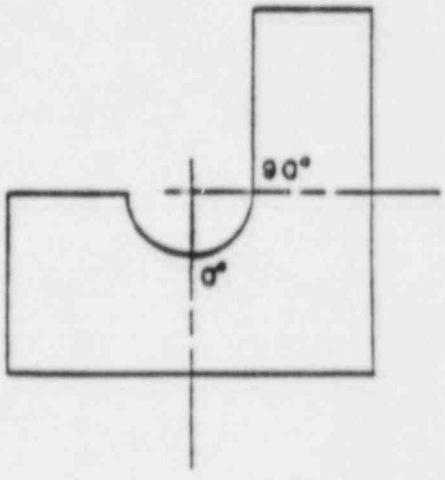
Governor end YES — Generator end YES

Strip chart number N/A — Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A — Start 6" — End 32"

Degree setting — Start 0° — End 80° — Plus 90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner [signature] — Level Hf Dof II

Examiner Duane B. Johnson — Level III

F&AA-G-12-1

C-8-37

EDDY CURRENT CALIBRATION REPORT

549 Associat

Job No. PAD 7396 Date 2-12-84 Report No. 841202-2
Material Description DC-103 CLOSE RW FILLETS #8
Code or Specification NDE 11.6 Rev D Full On N/A Full Off N/A
Reference Standard PAD-7396-83171 Instrument MIZ-17 S/N 8133867

Instrument

Freq. 2 MHz Gain 16 Volts/div 0.5 Phase 201
Test Probe FAA-SCP-100-P S/N 100-P
Reference Probe FAA-SCP-100-P S/N 100-P-1

CALIBRATION

N/A units @ _____ L/O _____ units @ _____ L/O
_____ units @ _____ L/O _____ units @ _____ L/O

STRIP CHART RECORDER

Type Gould Brush 220 S/N 0007006

Channel 1	Channel 2
Sen 50 mV/DIV.	Sen 100 mV/DIV
Position @ Null Point CTR	Position @ Null Point 1.5 V AT CTR

Chart Speed 25 mm/sec

Calibration Check

START

Time	Phase	Gain	
17:51	201°	16	#8 60 0° D
18:43	201°	16	#5 GE 0° D E
19:15	199°	14	#8 GE 49° D
19:45	199°	14	#6 GE 0° D
	Phase BREAK	Gain	END
22:22	199°	14	GE 0° D
22:40	199°	14	#3 0° D
23:09	199°	14	END

Examiner R&D-KR-3 Don O Johnson Level II Examiner Dwain B Johnson Level III

C-8-38

QUALITY CONTROL INSPECTION REPORT

JOB NUMBER	DATE
11600.37	2-13-84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
Crankshaft Journal Fillets 03-310A	06-102	I.P. #5 Rev 1 & White 2/13/84 L.P. Proc. C.3 Rev. 1

DWG NO OR P.O.	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	2	3	Performed L.P. inspection on crankshaft Rod journals. Cylinders #5, 7, & 8 No indications found

QUALITY CONTROL INSPECTOR	DATE	PAGE
[signature]	2-13-84	1 of 2

C-8-39

LIQUID PENETRANT EXAMINATION REPORT

PT

COMPONENT I.D. C3-MA

SYSTEM Crankshaft Journal Fillets

PLANT/LOCATION 06-102

A. MATERIAL	TYPE	FABRICATED PROCESS	☐ WELDED ☐ CAST ☒ WORKED
Carbon Steel	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☒ OTHER:
CROSS SECTION THICKNESS MAX NA MIN	PIPE DIA. NA	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☒ OTHER

B. NDE PROCEDURE No. 6.3	SURFACE/MAT'L. TEMP. 74°F	MATE. NO. 7-11-C61 6-C01	MWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	Spotcheck	SKC-NF/ZC-7B	83H100
2. PENETRANT	Spotcheck	ZL-22A	83F003
3. EMULSIFIER AND/OR REMOVER	Spotcheck	SKC-NF/ZC-7B	83H100
4. DEVELOPER	Spotcheck	SKD-NF/ZP-9B	83H041
5. POST EXAMINATION CLEANER	Spotcheck	SKC-NF/ZC-7B	83H100

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

Performed L.P. inspection on crankshaft Rod journals, cylinders #5, 7, & 8 No indications found

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1 NA			Accept
2 NA			Accept
3 NA			"
4 NA			"

D. ACCEPTANCE CRITERIA — –

OPERATOR _____

Level _____ Date _____

E. ATTEST — Edward E. Bowers Rodney L. Bowers Thomas J. Oldham

RESPONSIBLE CERTIFIED PERSONNEL — LEVEL II — DATE 2-13-84

C-8-40

DIESEL GENERATOR COMPONENT QUALITY REVALIDATION

COMPONENT: 03-310A Crankshaft and Bearings: Crankshaft + Turning Gear

QUALITY ASSURANCE INSPECTION PLAN

I.P. NO. 5

REV. 3

CHANGE 0

D.G. 103

PREPARER: [signature] DATE: 3/3/84

REVIEWER: [signature] DATE: 3/5/84

APPROVAL: [signature] DATE: 3/5/84

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

11600.37	WO 03-310A
SPEC D.G. Inspect. 5 -	REV 3

TITLE Crankshaft & bearings: Crankshaft & turning gear

ITEM No.	ATTRIBUTE	HOLD/SURVEILLANCE POINT	REFERENCE	QA PLAN/INSTRUCTIONS
1			QR-1-03-310A QR-2 QR-3	TASK DESCRIPTION Perform LP and Eddy current inspections of crankpin journal fillets numbers 5, 6, 7, 8 (governor and generator ends) Inspection following 100 hours full power operation. This test is to be done on each engine.

REMARKS

	DATE

6-8-41

STONE & WEBSTER ENGINEERING CORPORATION

QUALITY ASSURANCE - INSPECTION PLAN

	11600.37	NO 03-310A	
NO	D.G. Inspect. 5-	REV 3	CHG

TITLE Crankshaft & bearings: Crankshaft & turning gear

ITEM No.	ATTRIBUTE	HOLD/NOTIFY POINT	REFERENCE	CHECK/INSPECTION
1			LILCO LP Procedure Fluorescent 6/3 R/1 TER #Q-91 & Q-100	. Liquid penetrant testing: perform liquid penetrant testing on no. 5, 6, 7 & 8 for D.G. 101 & 103 crankpin journal fillets (governor & generator ends) and record results. (Fluorescent) for each engine photographic record of results required. RESPONSIBILITY: Inspection Group/LILCO/FaAA to witness inspection
2			LILCO Eddy current procedure 11.6 TER #Q-100	. Eddy current examination: perform eddy current examination on no. 5, 6, 7 & 8 for D. G. 101 & 103 crankpin journal fillets (governor & generator ends) and record results (for each engine). RESPONSIBILITY: LILCO Q.A. interface/FaAA to witness inspections
3			QR-3 TER #Q-91	. Perform visual inspection of crankpin journal surface for signs of wear. Document with photographs on D.G. 101 & 103 #5, 7 & 8 RESPONSIBILITY: Inspection Group Note 1) inspection following 100 hours of 100% operation. Note 2) requires design group review forward data for review.
4			TER#Q-20	. Perform a visual inspection (using a mirror if necessary) of the crankshaft gear PC no. 02-310-01-0B RESPONSIBILITY: Inspection Group - D.G. 102 Note: pay particular attention of signs of wear, pitting, galling, chipping, cracking and/or breakage. Inspection to include pressure (drive) & backside of gear teeth at approx. 45° intervals around gear diameter = DG 102

REMARKS

DATE

2-8-82

C-8-43

INTEROFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37 Component No 03-310A
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s Att. 7

MESSAGE:—

ATTACHED PLEASE FIND One SATISFACTORY INSPECTION REPORTS GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

3-14-87
DATE

R D Murray
SIGNATURE

544
TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS

#5,6,7,8

DATE

SIGNATURE

TELEPHONE

A 646 136

SENDER DETACH AND RETAIN THIS COPY

C-8-44

INTEROFFICE CORRESPONDENCE

TO:	LOCATION	SUBJECT / REFERENCE / J.O. NO.
FROM:	LOCATION	

MESSAGE:—

DATE SIGNATURE TELEPHONE

REPLY:

DATE SIGNATURE TELEPHONE

A 046 136

REPLIER RETURN WHITE COPY — RETAIN THIS COPY

C-8-45

Recording form for crank pin fillet

Eddy-Current examination

Engine number DG-103 Job number 03310 A

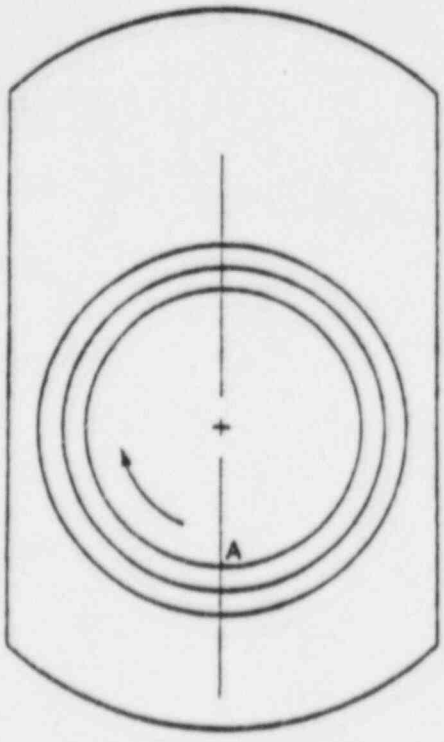
Rod journal number #5 Date 3/14/84

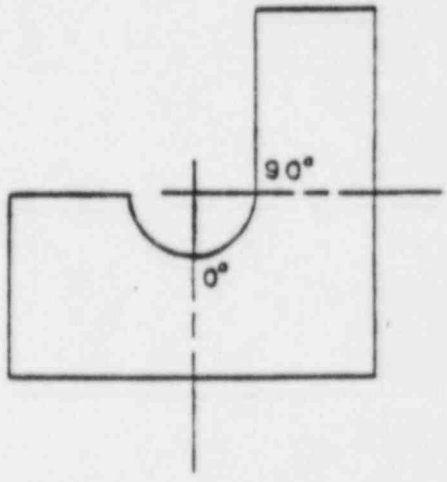
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5-1/2 Degree setting Start 0°

End 22 1/2 End 80°

+90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Don Johnson Level II

Examiner Duane D. Johnson Level III

FaAA-G-12-1

C-8-46

Associa
2 of 8

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3/14/85 Report No. 84-0314-1

Material Description DG-103 12&13 CRANK PIN #5

Code or Specification FAA NO5 11.6 Par E Full On N/A Full Off N/A

Reference Standard PAO 7494-83121 Instrument MIZ-17 S/N B133867

Instrument

Freq. 20MHz Gain 13 Volts/div 0.5 Phase ~~180~~ 197

Test Probe FAA 100-P S/N 100-P

Reference Probe FAA 100-1 S/N 100P-1

CALIBRATION

____ units @ ____ L/O ____ units @ ____ L/O

____ units @ ____ L/O ____ units @ ____ L/O

STRIP CHART RECORDER

Type BUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mV	Sen 100 mV
Position @ Null Point 0.0	Position @ Null Point 1.5V above center
Chart Speed 25 mm/sec	

Calibration Check

Time 5:30	Phase 197	Gain 13	start @ 60V C
Time 4:16	Phase 197	Gain 13	D 60V O
Time 9:28	Phase 197	Gain 13	END
Time 9:32	Phase 197	Gain 19	D 60V 82
Time 9:36	Phase 197	Gain 19	END
Time 9:40	Phase 197	Gain 12	@ 90°
Time 9:45	Phase 197	Gain 13	END ~~@ 90~~
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner [signature] Level II Examiner [signature] Level III

R&D-KR-3

C-8-47

"47"

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG 103 Job number 03310A

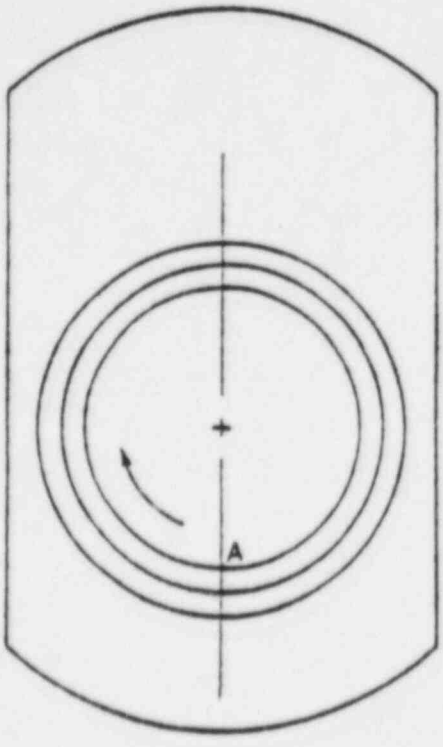
Rod journal number #6 Date 3-13-84

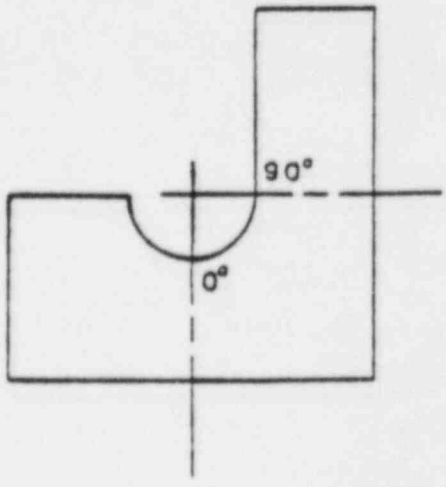
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5-1/2 Degree setting Start 0°

End 32 1/2 End 80°

4-90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner R.D. Johnson Level II

Examiner Dennis D. Johnson Level III

FeAA-G-12-1

C-8-48

Associat
4 of 8

EDDY CURRENT CALIBRATION REPORT

Job No. 03310N Date 3/13/84 Report No. 84 03 13 - 3

Material Description DG-105 12X13 CRANK PIN #6

Code or Specification FAA NDS 11.6 Rev 1 Full On N/R Full Off N/R

Reference Standard P20-7396-83121 Instrument MIZ-17 S/N 13133867

Instrument

Freq. 2.0 MHz Gain 13 Volts/div 0.5 Phase 194

Test Probe FAA-100-P S/N 100 P

Reference Probe FAA 100-12 S/N 100P-1

CALIBRATION

N units @ N L/O N units @ N L/O

N units @ N L/O N units @ N L/O

STRIP CHART RECORDER

Type B03M 2200 S/N 7006

Channel 1		Channel 2	
Sen	100 mV/div	Sen	100 mV/div
Position @ Null Point	0.0V	Position @ Null Point	1.5 Lt of center
Chart Speed	25 mm/sec		

Calibration Check

Time	7:30 PM	Phase	194	Gain 13 START @ 0 Volts
Time	8:18 PM	Phase	194	Gain 13 END
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain
Time		Phase		Gain

Examiner R&D-KR-3 [signature] Level II Examiner [signature] Level III

C-849

Recording form for crank pin fillet Eddy-Current examination

57°

Engine number DC-10 3 Job number C3310A

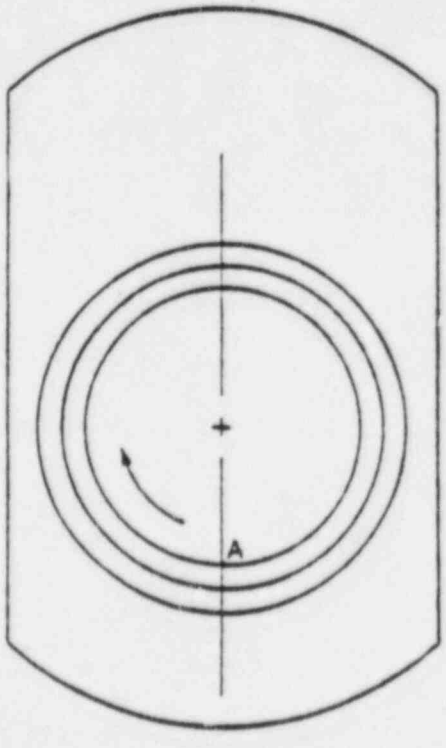
Rod journal number #7 Date 3/13/84

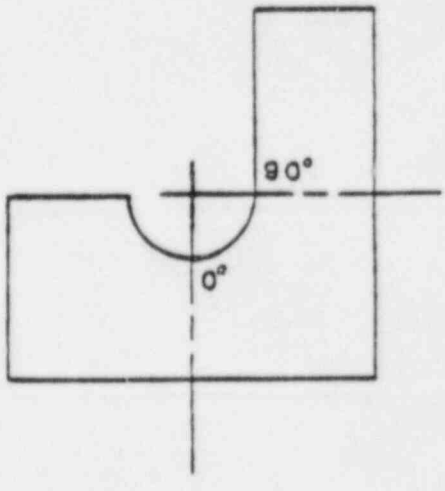
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? No Relevant Indications

Fill out sketches below





Distance from A Start 5½

End 32½

Degree setting Start 0

End 80°

+ 40°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Wm Johnson Level IV

Examiner Duane B Johnson Level III

F&AA-Q-12-1

C-8-50

Associat
6 of 8

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3-13-87 Report No. 840312-2

Material Description DG-103 12x13 CRANK PIN #7

Code or Specification FAA NDE 11.6 Rev 1 Full On N/A Full Off N/A

Reference Standard PAO-7396-83121 Instrument MIZ-17 S/N B133867

Instrument

Freq. 2.0 MHz Gain 13 Volts/div 0.5" Phase 194

Test Probe F2AA 100-P S/N 100P

Reference Probe F2AA 100-P S/N 100P-1

CALIBRATION

____ units @ ____ L/O ____ units @ ____ L/O

____ units @ ____ L/O ____ units @ ____ L/O

STRIP CHART RECORDER

Type BUSH 2210 S/N 7016

Channel 1	Channel 2
Sen 100 mv/div	Sen 100 mv/div
Position @ Null Point 0.0 V	Position @ Null Point 1.5 RT of C

Chart Speed 25 mm/sec

Calibration Check

Time 4:00	Phase 194	Gain 13	START B CAL-0
Time 4:48	Phase 194	Gain 13	D CAL 0°-R°
Time 5:04	Phase 194	Gain 13	D CAL -2°
Time 6:29	Phase 194	Gain 13	D CAL -56.4° -52.1°
Time 6:38	Phase 194	Gain 13	END
Time 6:41	Phase 194	Gain 14	D CAL -44.5°
Time 6:54	Phase 194	Gain 19 SAND	D CAL 24-44.5° END
Time 7:00	Phase 194	Gain 2424	D CAL 72-90°
Time 7:05	Phase 194	Gain 24	END
Time	Phase	Gain	

Examiner R&D-KR-3 Dan Johnson Level II Examiner Glenn S. Tyler Level III

C-8-51

1 of 8

ecording form for crank pin fillet
Eddy-Current examination

Engine number DG-103 Job number 03510A

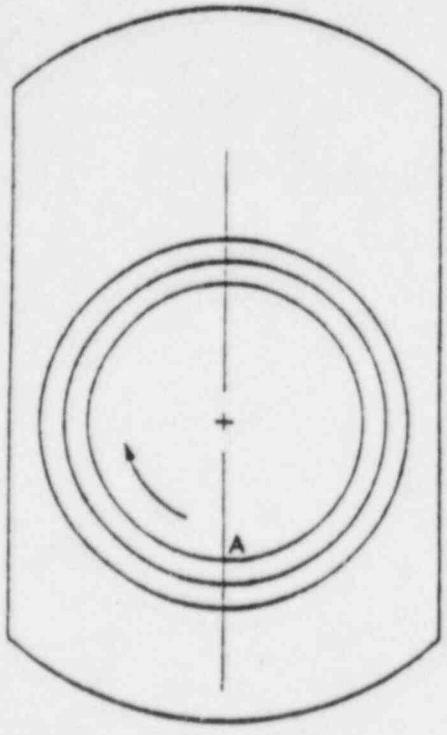
Rod journal number 8 Date 3/13/84

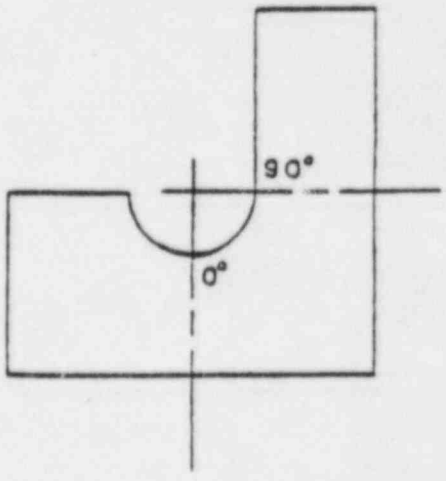
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5 1/2 Degree setting Start 0°

End 32 1/2 End 80°

±90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner [signature] Level III, II

Examiner [signature] Level III

FSAA-Q-12-1

C-8-52

Associa

5 of 5

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3/13/84 Report No. 840213-1

Material Description CRANK SHAFT 12x13 - Rod Cheek #8 D6-103

Code or Specification E.AA NQE 11.6 Rev 2 Full On N/A Full Off N/A

Reference Standard PAO-7396-83121 Instrument MIZ-17 S/N B133867

Instrument

Freq. 2.0 MHz Gain _____ Volts/div 0.5 Phase 197

Test Probe EAA-100P S/N 100P

Reference Probe EAA-100P S/N 100P-2

CALIBRATION

N/A units @ N/A L/O N/A units @ N/A L/O

N/A units @ N/A L/O N/A units @ N/A L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mv/div	Sen 100 mv/div
Position @ Null Point 0.0 V	Position @ Null Point 1.5 V Set at
Chart Speed 25 mm/sec	

Calibration Check

Time 1:12	Phase 197	Gain 17	Beg START R60V-0
Time 2:10	Phase 194	Gain 17	D60V-20°
Time 2:10	Phase 194	Gain 15	
Time 3:25	Phase 194	Gain 15	END
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner L. Clark Johnson Level III Examiner D.M. Johnson Level II

R&D-KR-3

C-8-52

INTERUFFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37	03-3101 ATT. # 1 DG-103
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s	

4,5,6,7

MESSAGE: —

ATTACHED PLEASE FIND 1 CORRECTED SATISFACTORY INSPECTION REPORTS (2 PAGES) GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

THIS IS A CORRECT REPORT AS INITIAL REPORT INDICATED THAT FLOURESCENT LIQUID PENETRANT TESTING WAS PERFORMED ON CRANKPIN FILLET "WELDS". SINCE THERE ARE NO FILLET WELDS ON THE CRANKPIN, THE REPORTS WERE CORRECTED BY DELETING THE WORD "WELDS" AS THE WORD FILLET REFERS TO THE EOMETRIC AREAS ON THE CRANKPIN REQUIRING L.P. EXAMINATION.

MARCH 14, 1984 (DATE)

R D Murray (SIGNATURE) 563/54

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS

DATE | SIGNATURE | TELEPHONE

A 046 138

SENDER DETACH AND RETAIN THIS COP

C-8-54

INTE[illegible]FFICE CORRESPONDENCE

TO: DISTRIBUTION	LOCATION SNPS-1	SUBJECT / REFERENCE / J.O. NO. 11600.37 03.310A
FROM: R. MURRAY	LOCATION QEG	TRANSMITTAL OF SAT I.R.'s att # 1

MESSAGE:

ATTACHED PLEASE FIND 1 SATISFACTORY INSPECTION REPORTS (2~~79~~)

GENERATED BY THE QUALITY REVALIDATION INSPECTION GROUP AND REVIEWED BY THE QUALITY ENGINEERING GROUP. THEY ARE FORWARDED TO YOU FOR YOUR INFORMATION IN ACCORDANCE WITH EDG QR/DR PROGRAM MEMO R. NAJUCH

3/12/84 — DATE

R D Murray — SIGNATURE

564 — TELEPHONE

REPLY:

DIST. R. NAJUCH (IOC ONLY)
G. ROGERS DRG W/ ATTACHMENTS

DATE — SIGNATURE — TELEPHONE

A 046128

SENDER DETACH AND RETAIN THIS COPY

C-8-55

LILCO — LIQUID PENETRANT EXAMINATION REPORT

PT

COMPONENT I.D. 03-510A Crankpin Journal Fillets

A. MATERIAL 5140-1	TYPE N/A	FABRICATED PROCESS	☒ WELDED ☐ CAST ☐ WORKED	
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☒ OTHER:	
CROSS SECTION THICKNESS MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER	

B. NDE PROCEDURE No. G3 Rev 1	SURFACE/MAT'L. TEMP. 70°	M&TE. NO. 7-11-108	MWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	Spotcheck	SKC-NF/ZC-7A	SIGCC.S
2. PENETRANT	Magnaflux	ZL-22A	83F003
3. EMULSIFIER AND/OR REMOVER	Spotcheck	SKC-NF/ZC-7B	SIGCC.S
4. DEVELOPER	Magnaflux	SKD-NF/ZP-9B	83H011
5. POST EXAMINATION CLEANER	Spotcheck	SKC-NF/ZC-7B	SIGCGS

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

DG-103 Flaresent LP on crankshaft flng: ~~entire~~ FILLETS. ~~N.S.~~

Cyls #5, #6 & #7

No Recordable Indications

EN R-43

C. EVALUATION	REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1			
2			
3			
4			

PLANT/LOCATION OG 10

D. ACCEPTANCE CRITERIA	4.2	OPERATOR Tom Burkman Level II Date 3-12-84

E. ATTEST	Tom Burkman	II	3-12-84	
	RESPONSIBLE CERTIFIED PERSONNEL	LEVEL	DATE	

C-8-56

QUALITY CONTROL
INSPECTION REPORT

JOB NUMBER	DATE
11600.37	5-12-84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: Crankpin Journal Fillets	DG-103	I.P. NO. 5 REV. 5 CHG 0
COMPONENT NO. 03-310A		TER # Q-100
		LILCO LP PROC. C.3 REV. 1
		DWG. NO. N/A

DWG NO OR P O	ITEM	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	1	6	Performed Fluorescent L-Penetrant on Fillets ~~welds~~ cyls #5, 6 & 7 N.C.R. 3/14/84
			SAT

M&TE NO. _____, _____, _____, _____, _____, _____, _____, _____

QUALITY CONTROL INSPECTING | DATE | PAGE

Tom Baitinger | 5-12-84 | 1 of 2

C-8-57

INTEROFFICE CORRESPONDENCE

TO: E. Youngling/ T. Rose	LOCATION	SUBJECT / REFERENCE / J.O NO.
FROM: R.J. Najuch/ R. Fraser	LOCATION	UNSAT INSPECTION REPORT

MESSAGE: —

I.O.C. No. 47

Attached please find TER No. Q - 215 which transmits a potentially unsatisfactory inspection report for component number 03-310A, engine no. 103.
Please review and issue LDR if required. Please return a copy of this I.O.C. giving the LDR number(s), or return a statement that a LDR is not required. This will enable us to close out our paperwork more expeditiously in order to support the release of the engine for reassembly.

NOTE: Attached IR is a revision of the original IR issued to correct wording (delete "welds"). If LDR is issued, it should supercede LDR # 2203 which has already been written on the original IR. (ref. I.O.C. No. 35)

enc.

cc: J. Kammeyer (INFO) (enc)
M. Shuster (INFO)(enc)

3-14-84
DATE

Ray Fraser
SIGNATURE

552
TELEPHONE

REPLY:

UNSAT F-S-Q215 Q-173-LDR 2203

DATE

SIGNATURE

TELEPHONE

A 846 [3]

C-8-58

1/4

ITEM/COMPONENT NO.	TDI PART NO.	INITIATOR	DATE	ORGANIZATION
03-310A	03-310A	SIGNATURE	3/14/84	☐ ENGINEERING ☒ QUALITY

CONDITION DETAILS: ATTACHED INSPECTION REPORT (2 PAGES) GENERATED BY S. Moore DATED 3-12-84 REPORTS UNSATISFACTORY INSPECTION RESULTS FOR THIS PART.

RECOMMENDATIONS: FORWARD TO DESIGN REVIEW FOR DISPOSITION.
Attached IR is unsatisfactory.
See Sheet 2 for recommended disposition.
THIS TER SUPERCEDES TER Q-173 IN ITS ENTIRETY

REQUIRED COMPLETION DATE: 3-14-84

ASSIGNMENT

DISPOSITION ASSIGNED TO	RESPONSIBLE CHAIRPERSON	DATE
☐ ENGINEERING ☐ QUALITY	R. Fraser SIGNATURE	3-14-84

DISPOSITION

DISPOSITION DETAILS: Follow PROCEDURE 1 OUTLINED ON PAGE 2

DISPOSITION ASSIGNED TO ☒ ENGINEERING ☐ QUALITY ☐ NONE REQUIRED

SUPPLIED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE
K Aston	3-14-84	K Aston RESP. CHAIRPERSON	3-14-84	PROGRAM MANAGER	3/14/84

ACTION

ACTION ASSIGNED TO	ACTION COMPLETED BY	DATE
P. Johnston		

CC: CKS/GWR/RJN/EFM
TER LOG

C-8-59

-/+

RECOMMENDED

UNSAT TER DISPOSITION

Distribute for action as follows:

1) Design Review (G. Rogers) - Review as part of Design Review Task. Return to Quality Group a statement of acceptability (i.e., inspection information is sufficient for Design Review Group and no further inspections are required) or provide further detailed inspection/criteria, and add to Task Description "review information provided on TER Q-215 ", for each component affected.

2) SEO (J. Kammeyer) - distribute for information.

3) LSU/OQA - review for applicability and issue LDR as needed.

4) M. Schuster - obtain LDR number as issued for component files and closeout.

C-8-60

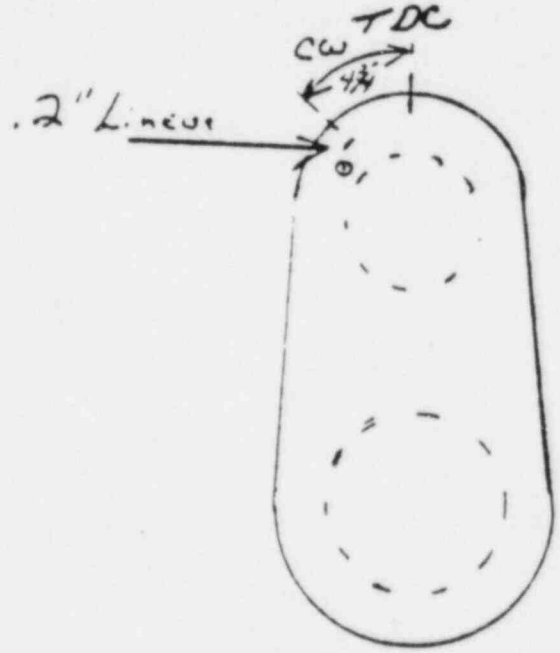
...E & WEBSTER ENGINEERING CORPORATION

QUALITY CONTROL INSPECTION REPORT

JOB NUMBER 11600.37 | DATE 3/12/84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: CRANKPIN JOURNAL FILLETS	DG- 103	I.P. NO. 5 REV. 3 CHG TER # Q-100 LILCO LP PROC. 6.3 REV DWG. NO. N/A
COMPONENT NO. 03-310A		

DWG NO OR P.O.	REV	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	1	2	Performed Flourescent Exam on Crankshaft flange FILLETS M.T. 1/19/84 C As viewed facing governor end UNSAT



MATE NO. _____

REVIEWED _____ QUALITY CONTROL INSPECTOR _____ DATE 3/12/84 PAGE 1 OF 2

C-8-61

LILCO

LIQUID PENETRANT EXAMINATION REPORT

Page 2 of 2

PT

Crankpin Journal Fillets

A. MATERIAL: Steel	TYPE	FABRICATED PROCESS	☐ WELDED ☐ CAST ☒ WORKED	
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD ☒ OTHER:		
CROSS SECTION THICKNESS: MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER	
B. NDE PROCEDURE No. G-23 Rev 1	SURFACE/MAT'L. TEMP. 70°	MATL. NO. 7-11-708	MWR/RR. No.	

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G065
2. PENETRANT	MAGNAFLUX	ZL-22A	83F003
3. EMULSIFIER AND/OR REMOVER	SPOTCHECK	SKC-NF/ZC-7	81G068
4. DEVELOPER	MAGNAFLUX	SKD-NF/ZP-9B	83HC41
5. POST EXAMINATION CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G063

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

DG-105 Fluorescent LP on crankshaft journal fillets. Cyl "E"

Reportable Indications Per Index & Sketch

15-45

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1 Sketch	.2"	Linear	Reject 4½" Cyl Journal Fillet Counter End
2			
3			
4	-		

D. ACCEPTANCE CRITERIA: 4.2

OPERATOR [signature] Level II Date 3-2-84

E. ATTEST [signature] QC

C-8-62

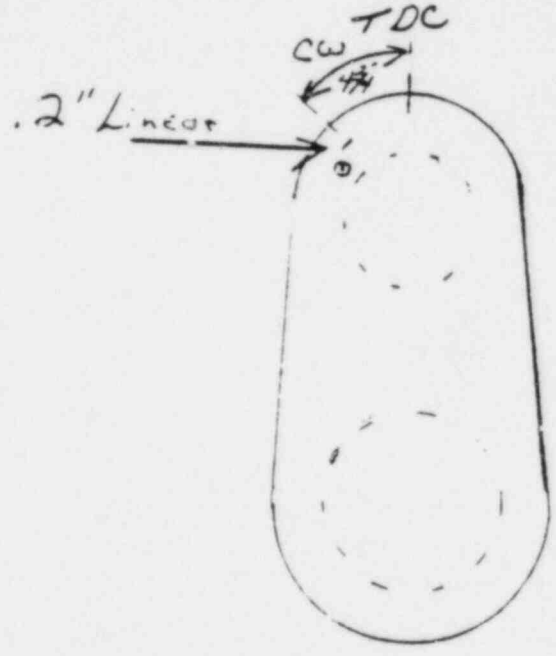
INSPECTION REPORT

NUMBER 11600.37 | DATE 3/12/84

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: CRANKPIN JOURNAL FILLETS	DG- 103	I.P. NO. 5 REV. 3 CHG 0
		TER # Q-100
COMPONENT NO. 03-310A		LILCO LP PROC. 6.3 REV. 1
		DWG. NO. N/A

DWG NO OR P.O.	REV	QTY	DESCRIPTION(S) AND INSPECTION REMARK(S)
	1	2	Performed Flouriscent Exam on Crankshaft ~~journals~~ FILLETS per N.F.I. 11600.84 Cyl #8

As viewed facing govenor end



UNSAT

M&TE NO. _____, _____, _____, _____

_____, _____, _____, _____

REVIEWED: N.F. 11.86a

DATE 3/12/84 | PAGE 1 OF 2

C-8-63

LILCO LIQUID PENETRANT EXAMINATION REPORT

PT

A. MATERIAL: Steel	TYPE	FABRICATED PROCESS	☐ WELDED ☐ CAST ☒ WORKED	
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☒ OTHER:	
CROSS SECTION THICKNESS: MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER	

COMPONENT I.D. 03-3104 Crankpin Journal Fillets

B. NDE PROCEDURE No. 6.73 Rev 1	SURFACE/MAT'L. TEMP. 70°	MAT'L. NO. 7-11-708	MWR/RR. No.

SYSTEM R-43

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G065
2. PENETRANT	MAGNAFLUX	ZL-22A	83EC03
3. EMULSIFIER AND/OR REMOVER	SPOTCHECK	SKC-NF/ZC-7	81G068
4. DEVELOPER	MAGNAFLUX	SKD-NF/ZP-9B	83HC41
5. POST EXAMINATION CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G068

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

DG-103 - Flourescent LP on crankshaft flange ~~entire~~ FILLETS Cyl "B"
NLB 3/14/84

Recordable Indication See Index & sketch

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1 Sketch	.2"	Linear	Reject 4½" CW locking cut from Journal Paint Tx for comparative Governor End
2			
3			
4			

PLANT/LOCATION DG 103

D. ACCEPTANCE CRITERIA	4.2	OPERATOR [signature] Level II Date 3-12-84

E. ATTEST [signature] — RESPONSIBLE CERTIFIED PERSONNEL | II — LEVEL | 2-12-84 — DATE

C-8-64

ITEM/COMPONENT NO.	TDI PART NO.	INITIATOR	DATE	ORGANIZATION
03-310A	03-310A	SIGNATURE	3/14/84	☐ ENGINEERING ☒ QUALITY

CONDITION DETAILS: ATTACHED INSPECTION REPORT (2 PAGES) GENERATED BY S. Pierce DATED 3-12-84 REPORTS UNSATISFACTORY INSPECTION RESULTS FOR THIS PART.

RECOMMENDATIONS: FORWARD TO DESIGN REVIEW FOR DISPOSITION.
Attached IR is unsatisfactory.
See Sheet 2 for recommended disposition.
THIS TER SUPERCEDES TER Q-173 IN ITS ENTIRETY

REQUIRED COMPLETION DATE: 3-14-84

ASSIGNMENT

DISPOSITION ASSIGNED TO	RESPONSIBLE CHAIRPERSON	DATE
☐ ENGINEERING ☐ QUALITY	R. Fraser SIGNATURE	3-14-84

DISPOSITION

DISPOSITION DETAILS: Follow Procedure 1 outlined on Page 2

DISPOSITION ASSIGNED TO ☒ ENGINEERING ☐ QUALITY ☐ NONE REQUIRED

APPLIED BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE
K Aslam	3/14/84	K Aslam DESP. CHAIRPERSON	3/14/84	PROGRAM MANAGER	3/14/84

ACTION

ACTION ASSIGNED TO	ACTION COMPLETED BY	DATE
D Johnston	K Aslam for D Johnston	4-11-84

CC: CKS/GVR/RJN/EFM
TER LOG

C-8-65

c/4

RECOMMENDED

UNSAT TER DISPOSITION

Distribute for action as follows:

1) Design Review (G. Rogers) - Review as part of Design Review Task. Return to Quality Group a statement of acceptability (i.e., inspection information is sufficient for Design Review Group and no further inspections are required) or provide further detailed inspection/criteria, and add to Task Description "review information provided on TER Q-215 ", for each component affected.

2) SEO (J. Kammeyer) - distribute for information.

3) LSU/OQA - review for applicability and issue LDR as needed.

4) M. Schuster - obtain LDR number as issued for component files and closeout.

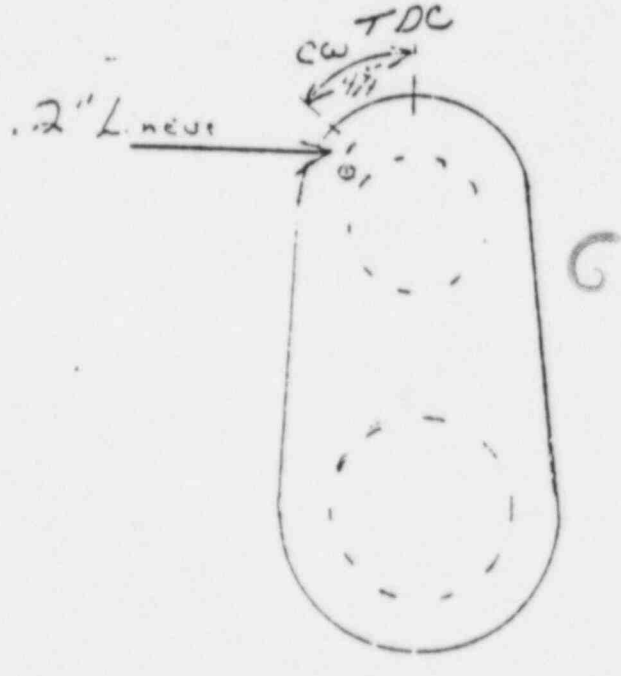
C-8-66

QUALITY CONTROL
INSPECTION REPORT

SYSTEM(S) OR PART(S) NAME	LOCATION(S)	REFERENCE DOCUMENT(S)
COMPONENT NAME: CRANKPIN JOURNAL FILLETS COMPONENT NO. 07-310A	DG- 103	I.P. NO. 5 REV. 3 CHG TER # 0-100 LILCO LP PROC. 6.3 REV. DWG. NO. N/A

JOB NUMBER 11600.37 DATE 3/12/84

DWG NO OR P.O.	REV	QTY	DESCRIPTIONS AND INSPECTION REMARKS
	1	2	Performed Fluorescent Exam on Crankshaft journal fillets #1 & #6 As viewed facing governor end



NOTE NO. _____

REVIEWED: N.F. [illegible] 3/12/84

C-867

LIGO

LIQUID PENETRANT EXAMINATION REPORT

A. MATERIAL: Steel	TYPE	FABRICATED PROCESS	☐ WELDED ☐ CAST ☑ FORGED
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☒ OTHER:
CROSS SECTION THICKNESS: MAX N/A MIN	PIPE DIA. N/A	SURFACE CONDITION	☑ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER

B. LDE PROCEDURE No. G 73 Rev I	SURFACE/MAT'L. TEMP. 70°	MATE. NO. 7-11-704	NWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	SPOTCHECK	SKC-NF/ZC-7	81C01S
2. PENETRANT	MAGNAFLUX	ZL-22A	83EC03
3. EMULSIFIER AND/OR REMOVER	SPOTCHECK	SKC-NF/ZC-7	81G06R
4. DEVELOPER	MAGNAFLUX	SKD-NF/ZP-9R	83HC41
5. POST EXAMINATION CLEANER	SPOTCHECK	SKC-NF/ZC-7	81C01R

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

DG-103 Fluorescent LP on crankshaft flange fillets Cyl "B"

Recordable Indication See below & sketch

COMPONENT I.D. 03-3104 Crankpin Journal Fillets

TECH R-43

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1 Sketch	.2"	Linear	Reject Per Engineering Evaluation Comment Limit
2			
3			
4			

D. ACCEPTANCE CRITERIA: 4.12

OPERATOR [illegible] Level II Date 5-12-04

E. ATTEST [illegible] Level III Date 5-12-04

RECORDABLE INDICATIONS 0

C-8-68

This inspection report is acceptable for design review.

03-310A
Q-215

K Lohr for P. Johnston
Telecon 4-11-61

C-8-69

1	☒ DEFICIENCY REPORT	RIGINAL N°: 3/13/84	[illegible]	2 [illegible]
2	System/Component: Cont. Panel Cable	System Designator: [illegible]	Work [illegible]	Date: 3/13/84 — Class: I ☒ II ☐ III ☐
3	Mfg./Contractor: TDI	P.O.: 212552	Material Location: [illegible]	Reject Tag No. _____ Yes ☐ No ☐
4	Spec. Violated: SNI-289	Drawing Violated: N/A	Procedure Violated: N/A	Code/Standard Violated: N/A

5 Condition Details: TER 9-173 (03-310A) reports unsat condition QCER for Crankpin Journal Fillets and UT exam report show .2" linear indications at right "a" flange with unacceptable evaluation

03-310A

6	Originator: [signature] Signature — 3-13-84 Date	QAM: [signature] Signature — 3/13/84 Date
7	Responsibility: ☐ LILCO ☒ SWEC — [signature] Signature/Org. & Engr. — Date: 3/13/84	
8	ACTION: ☒ Accept As Is ☐ Rework ☐ [illegible] ☐ Repair ☐ Procedure ☐ [illegible]	

9 Disposition Details:

The "recordable indications" are not relevant based on the detailed eddy current examinations conducted on the crankshaft, see attached report. In addition, the attached UT is in error, there is no "crankshaft flange weld", and the "recordable indication" is in a non-critical area.

10	Approvals: [signature] 3/13/84 S&W Lead Engr./LILCO Test Engr./Date	[signature] for J.C. Kammeyer 3/13/84 Project Engineer / Date

11	_____ LILCO SU Engr. Date	_____ LILCO Site QAM Date	Repair/Rework Request No.
12	Engr. Complete/Date	PQR Complete: _____ CONST. SUPT./Date	LILCO SU/Date	Rework Inspection: ☐ SAT ☐ UNSAT _____ LILCO Site QAM/Date
13	LDR Closed: _____ LILCO Site QAM/Date	New LDR Report No. Issued	REMARKS

C-8-70

— RETAIN YELLOW C
FORWARD WHITE A / PINK COPIES.

REPLIER - RETURN WHITE COPY
RETAIN PINK COPY FOR FILE.

INTEROFFICE CORRESPONDENCE

TO: E. Youngling/ T. Rose	LOCATION	SUBJECT / REFERENCE / J.O. NO.
FROM: R.J. Najuch/ R. Fraser	LOCATION	UNSAT INSPECTION REPORT

MESSAGE —

I.O.C. No. 35

Attached please find TER No. 1 - 173 which transmits a potentially unsatisfactory inspection report for component number C3-3/CA, engine no. 109.
Please review and issue LDR if required. Please return a copy of this I.O.C. giving the LDR number(s), or return a statement that a LDR is not required. This will enable us to close out our paperwork more expeditiously in order to support the release of the engine for reassembly.

enc.

cc: J. Hammeyer (INFO) (enc)
M. Shuster (INFO)(enc)

DATE — Wayne Rawlins SIGNATURE — 332 TELEPHONE

REPLY

DATE — SIGNATURE — TELEPHONE

A 040 139

C-8-71

COMPONENT TASK EVALUATION REPORT

Page 1 of 4

[redacted]/COMPONENT NO.	TDI PART NO.	INITIATOR	DATE	ORGANIZATION
03-310A	03-310A	GDGhika SIGNATURE	3-12-84	☐ ENGINEERING ☐ QUALITY

TION DETAILS: ATTACHED INSPECTION REPORT (2 PAGES) GENERATED BY S. Meeker DATED 3-12-84 REPORTS UNSATISFACTORY INSPECTION RESULTS FOR THIS PART.

MENDATIONS: FORWARD TO DESIGN REVIEW FOR DISPOSITION.

TACHED IR IS UNSATISFACTORY - See sheet 2 for recommended disposition

ED COMPLETION DATE:

ASSIGNMENT

ION ASSIGNED TO	RESPONSIBLE CHAIRPERSON	DATE
INEERING ☐ QUALITY	SIGNATURE	3/12/84

DISPOSITION

SITION DETAILS:

ITION ASSIGNED TO ☐ ENGINEERING ☐ QUALITY ☐ NONE REQUIRED

D BY	DATE	REVIEWED BY	DATE	APPROVED BY	DATE
		RESP. CHAIRPERSON		PROGRAM MANAGER	

ACTION

ASSIGNED TO	ACTION COMPLETED BY	DATE

S/GWR/RJN/EFM
ER LOG

C-8-72

RECOMMENDED
UNSAT TER DISPOSITION

TER # Q-173
Page 2 of 4

Distribute for action as follows:

1) Design Review (G. Rogers) - Review as part of Design Review Task. Return to Quality Group a statement of acceptability (i.e., inspection information is sufficient for Design Review Group and no further inspections are required) or provide further detailed inspection/criteria, and add to Task Description "review information provided on TER Q-173", for each component affected.

2) TPO (J. [illegible]) - distribute for information.

3) LSU/QQA - review for applicability and issue LDR as needed.

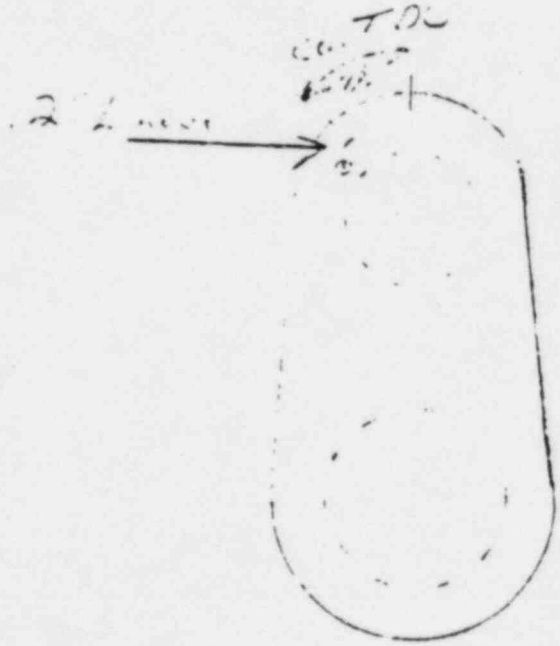
4) M. Schuster - obtain LDR number as issued for component files and closeout.

C-8-73

STONE
TER #Q-173
Page 3 of 4

		11600.37 / 3/12/84
	DOCUMENT(S)	REFERENCE DOCUMENT(S)
	DG- 107	I.P. NO. 5 REV. 5 CHG C
		TER # Q-100
		LILCO I.P. PROC. 6.3 REV. 1
PROJECT NO. 07-310A		DWG. NO. N/A

1	2.	Horizontal Fillets as shown on attached sketch



M&TR NO.

3/12/84 1 of 2

LIQUID PENETRANT EXAMINATION REPORT

Page 2 of 4

A. MATERIAL: Steel	TYPE	FABRICATED PROCESS	☐ WELDED ☐ CAST ☒ WORKED
	GEOMETRY	☐ PIPE ☐ PLATE ☐ ROD	☑ OTHER:
CROSS SECTION THICKNESS — MAX / MIN: N/A	PIPE DIA.: N/A	SURFACE CONDITION	☒ MACHINED ☐ GROUND ☐ AS FABRICATED ☐ OTHER
B. NDE PROCEDURE No. [illegible]	SURFACE/MAT'L. TEMP. 70°	DATE. NO. 7-11-74	MWR/RR. No.

INSPECTION MATERIALS	BRAND	DESIGNATION	BATCH NO.
1. PRE-CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G005
2. PENETRANT	MAGNAFLUX	ZL-22A	83E003
3. EMULSIFIER AND/OR REMOVER	SPOTCHECK	SKC-NF/ZC-7	81G008
4. DEVELOPER	MAGNAFLUX	SKD-NF/ZP-9	83H041
5. POST EXAMINATION CLEANER	SPOTCHECK	SKC-NF/ZC-7	81G005

SKETCH OR OTHER DETAIL: USE OTHER SIDE IF NECESSARY

[illegible] C/T [illegible]

[illegible]

C. EVALUATION — REPORT BELOW THOSE INDICATIONS OBSERVED AND THE PERTINENT INFORMATION REQUIRED. WHERE ADDITIONAL SPACE IS REQUIRED USE OTHER SIDE.

LOCATION	SIZE (INCHES)	DESCRIPTION	ACTION (ACCEPT/REJECT, AND COMMENT AS NECESSARY)
1 Sketch	.2"	Linear	Reject [illegible] Continued End
2			
3			
4			

D. ACCEPTANCE CRITERIA	[illegible] 2	OPERATOR [illegible] Level II Date 8-12-84
E. ATTEST	[illegible]	LEVEL [illegible] DATE 8-12-84

PT — COMPONENT I.D. [illegible] — SYSTEM R-4 — PLANT/LOCATION OG 1C3

C-8-75

INTEROFFICE CORRESPONDENCE

TO: KEN MORRISON	LOCATION	SUBJECT / REFERENCE / J.O. NO. 03310H	DG-103 CRANK PIN FILLET ET
FROM: [illegible]	LOCATION F.H		

MESSAGE:—

Eddy Current Inspection Completed on DG-103 Crank Pin Fillets #5, 6, 7 + 8. No relevant indications were observed. Area at pin # [illegible] PT indication was observed was scanned [illegible] circumferential [illegible] [illegible] to the circumferential [illegible]. No relevant indication was observed. Attached are the inspection reports.

[illegible] — DATE

[signature] — SIGNATURE — TELEPHONE

REPLY:

3-14-84 — DATE

[signature] — SIGNATURE — TELEPHONE

A 040 130

REPLIER RETURN WHITE COPY — RETAIN THIS COPY

C-8-76

Reporting form for crank pin fillet

Eddy-Current examination

Engine number DG-103 Job number 03510 A

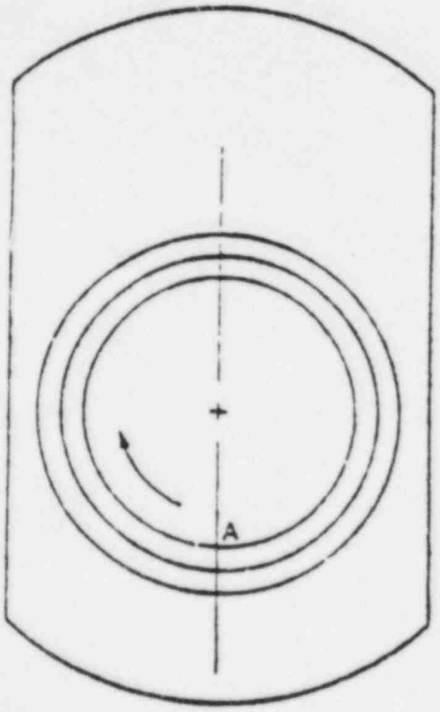
Rod journal number #5 Date 3/14/84

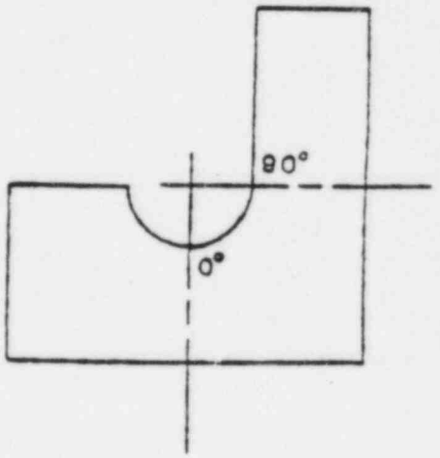
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5-1/2" Degree setting Start 0°

End 22 1/2" End 80°

490°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Dan Thuss Level II

Examiner Duane B. Johnson Level III

C-8-77

Associal
2 of 8

EDDY CURRENT CALIBRATION REPORT

Job No. 03310 A Date 3/14/84 Report No. 84-0314-1

Material Description DG-103 12 & 13 CRANK PIN #5

Code or Specification FAA NO5 11.6 Rev E Full On N/A Full Off N/A

Reference Standard PPD 7104-83121 Instrument MIZ-17 S/N B133867

Instrument

Freq. 2.0 MHz Gain 13 Volts/div 0.5 Phase 197

Test Probe FAA 100-P S/N 100-P

Reference Probe FAA 100-1 S/N 100P-1

CALIBRATION

____ units @ 197 L/O

____ units @ ____ L/O

____ units @ ____ L/O

____ units @ ____ L/O

STRIP CHART RECORDER

Type BOSH 220 S/N 7006

Channel 1

Sen 100 mV

Position @ Null Point 0.0

Chart Speed 20 mm/sec

Channel 2

Sen 100 mV

Position @ Null Point 15 1/2 [illegible]

Calibration Check

Time 8:20	Phase 197	Gain 13	start B 0.CW 0°
Time 9:16	Phase 197	Gain 13	B 60 CW 0
Time 9:28	Phase 197	Gain 13	END
Time 9:32	Phase 197	Gain 19	B 60 CW 0
Time 9:36	Phase 197	Gain 19	END
Time 9:40	Phase 197	Gain 13	B 90°
Time 9:45	Phase 197	Gain 13	END ~~B 90°~~
Time ____	Phase ____	Gain ____	
Time ____	Phase ____	Gain ____	
Time ____	Phase ____	Gain ____	

Examiner [signature] Level II Examiner [signature] Level III

R&D-KR-3

C-8-78

3 of 5

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG 103 Job number 03310A

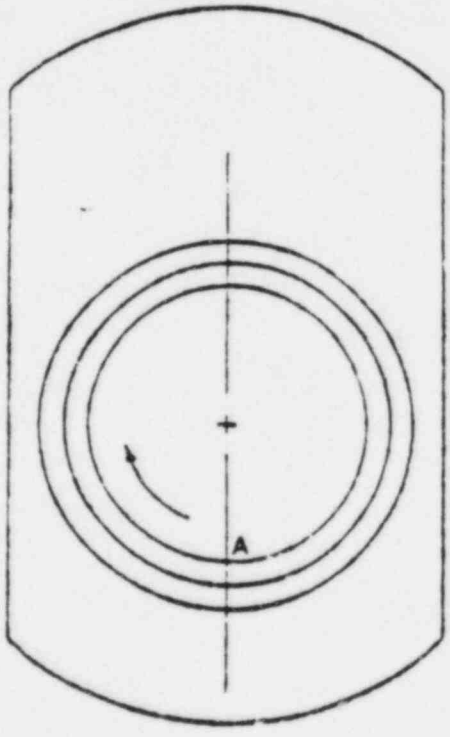
Rod journal number #6 Date 3-13-84

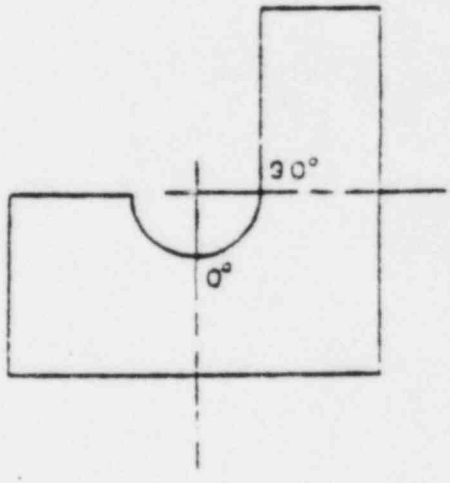
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 5-½ Degree setting Start 0°

End 22½ End 30°

4-90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Don Johnson Level II

Examiner Donald B. Johnson Level III

C-8-79

EDDY CURRENT CALIBRATION REPORT

Associated 4 of 8

[redacted] 03310M Date 3/13/84 Report No. 84 03 13 - 3

Material Description DG-10E 12X13 CRANK PIN #6

Code or Specification FAA NDS 11.6 Rev 1 Full On N/A Full Off N/A

Reference Standard P20-7396-83121 Instrument MIZ-17 S/N 12135867

Instrument

Freq. 20MHz Gain 13 Volts/div 0.5 Phase 194

Test Probe FAA-100-P S/N 100 P

Reference Probe FAA 100-12 S/N 100P-1

CALIBRATION

N/A units @ 11 L/O

N/A units @ 7 L/O

N/A units @ 17 L/O

units @ L/O

STRIP CHART RECORDER

Type BOSH 2200 S/N 700C

Channel 1

Sen 100 mV/div

Position @ Null Point 0.00

Chart Speed 25 mm/sec

Channel 2

Sen 100 mV/div

Position @ Null Point 1.5 AT 4 CLOCK

Calibration Check

Time 7:30 PM	Phase 194	Gain 13	START @ 3300
Time 8:18 PM	Phase 194	Gain 13	END
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner R&D-KR-3 [signature] Level II Examiner [signature] Level III

C-8-80

Recording form for crank pin fillet Eddy-Current examination

Engine number DC-10 3 Job number C3310A

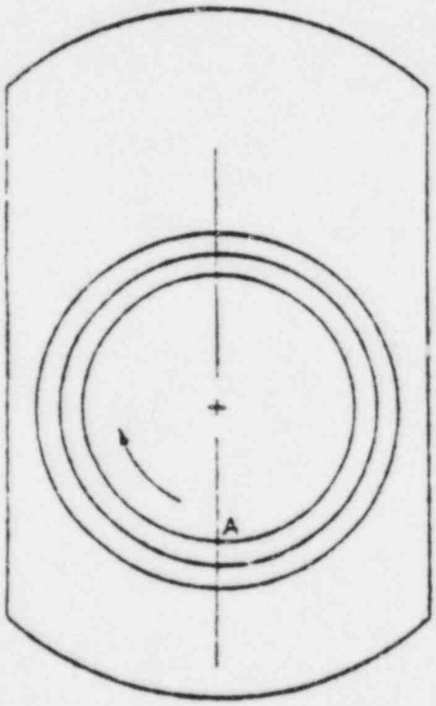
Rod journal number #7 Date 3/13/84

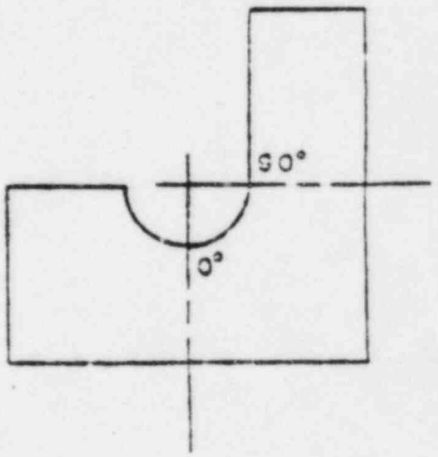
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? No Relevant Indications

Fill out sketches below





Distance from A Start 5½ Degree setting Start 0

End 32½ End +90°

-90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner Wes Johnson Level II

Examiner Diane B. Johnson Level III

C-8-81

Tukey's Associates 6 of 8

EDDY CURRENT CALIBRATION REPORT

Job No. 03310A Date 3-13-81 Report No. 840312-2

Material Description DG-103 12X13 CRANK Pin #7

Code or Specification FAA NDI 11.6 Rev 1 Full On N/A Full Off N/A

Reference Standard PAO-7396-83121 Instrument MIZ-17 S/N B133867

Instrument

Freq. 20 MHz Gain 13 Volts/div 0.5 Phase 124

Test Probe FAA 100-P S/N 100P

Reference Probe FAA 100-P S/N 100P-1

CALIBRATION

____ units @ ____ L/O

____ units @ ____ L/O

____ units @ ____ L/O

____ units @ ____ L/O

STRIP CHART RECORDER

Type Bush 2210 S/N 7016

Channel 1

Sen 100 mv/div

Position @ Null Point 6 0 V

Chart Speed 25 mm/sec

Channel 2

Sen 50 mv/div

Position @ Null Point 1.5 RT Ref

Calibration Check

Time 4:00	Phase 102	Gain 13	START E 6.0V-0
Time 4:48	Phase 194	Gain 13	D 6.0V-70°
Time 5:04	Phase 194	Gain 13	D 6.0V-20°
Time 6:29	Phase 194	Gain 13	D 6.0V-60, 56, 58
Time 6:38	Phase 194	Gain 13	D 6.0V-62, 64
Time 6:41	Phase 194	Gain 13	END
Time 6:59	Phase 194	Gain 14	D 6.0V 2-44
Time 7:00	Phase 102	Gain M 6000	D 6.0V 24-44/56 END
Time 7:05	Phase 194	Gain 3926	D 6.0V 72-80
Time	Phase	Gain 24	END
		Gain	

Examiner R&D-KR-3 Dan Johnson Level II Examiner Steven B. Tukey Level III

C-8-82

170

Recording form for crank pin fillet
Eddy-Current examination

Engine number DG-103 Job number 03510A

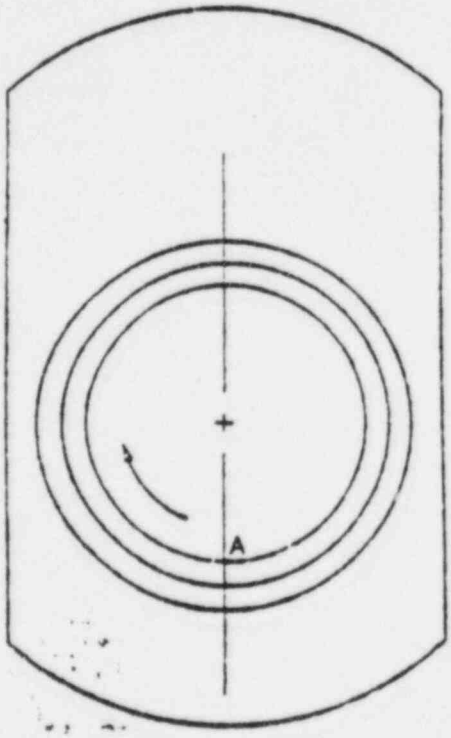
Rod journal number 8 Date 3/13/84

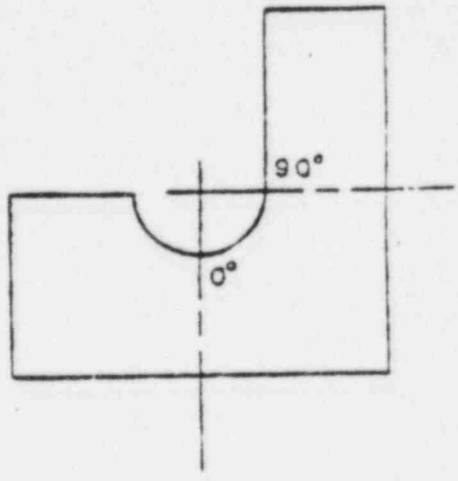
Governor end YES Generator end YES

Strip chart number N/A Indication number NONE

Relevant? NO RELEVANT INDICATIONS

Fill out sketches below





Distance from A Start 45 1/2 Degree setting Start 0°

End 32 1/2 End 80°
+90°

Magnitude of indication

Channel 1 N/A

Channel 2 N/A

Examiner [signature] Level Method II

Examiner [signature] Level III

C-8-83

Analys Associa 5 of 8

TO

EDDY CURRENT CALIBRATION REPORT

Job No. 05310A Date 3/13/84 Report No. 840313-1

Material Description CRANK SHAFT 12x13 - Rod Count #8 DG-103

Code or Specification E-AA NOE 11.6 Rev 2 Full On N/A Full Off N/A

Reference Standard PAO-7326-83121 Instrument MIZ-17. S/N B133867

Instrument

Freq. 2.0 MHz Gain _____ Volts/div 0.5 Phase 197

Test Probe E-AA-100P S/N 100P

Reference Probe E-AA-100P S/N 100P-1

CALIBRATION

N/A units @ N/A L/O N/A units @ N/A L/O

N/A units @ N/A L/O N/A units @ N/A L/O

STRIP CHART RECORDER

Type BRUSH 220 S/N 7006

Channel 1	Channel 2
Sen 100 mv/div	Sen 100 mv/div
Position @ Null Point 0.0 V	Position @ Null Point 1.5 V set/calc.
Chart Speed 25 mm/sec	

Calibration Check

Time 1:12	Phase 197	Gain 17	any SPANS 810V-0
Time 2:10	Phase 194	Gain 17	DG01-28°
Time 2:10	Phase 194	Gain E15	
Time 3:25	Phase 194	Gain 15	END
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	
Time	Phase	Gain	

Examiner Duane R Johnson Level III Examiner Don Johnson Level II

R&D-KR-3