Form SPD-1005-1

FOR INFORMATION ONLY

DUKE POWER COMPANY
PROCEDURE DISCREPANCIES
PROCESS RECORD

(1) ID No: TP/1/A/1350/25A

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: D/G 1A BLACKOUT AND LOAD REJECTION PREOPERATIONAL TEST

(4) DATE(S) PERFORMED: 3-28-84, 3-30-84, 3-31-84, 4-1-84

(5) DISCREPANCY PROCESSING:

Item No.	Procedure Section	Description	Corrective Action	Completion Date	Signature
1	12.0	CRDM FAN 1A INDICATING LIGHT SHOWED FAN OFF. CRDM FAN 1A LIGHT CYCLED BETWEEN ON AND OFF	INDICATING LIGHTS ARE CONTROLLED BY PRESSURE SWITCHES. SINCE CRDM HOUSING IS NOT INSTALLED THESE PRESSURE SWITCHES DO NOT ACCURATELY TELL IF ~~UNIT 1~~ RH FAN IS ON OR OFF. FANS WERE VERIFIED TO BE ON USING COMPUTER POINTS.	3-28-84	[illegible]
2	12.1.20	RN PUMP STRUCTURE VENT FAN 1A DID NOT START. RN PUMP STRUCTURE FAN 2A DID START.	RN PUMP STRUCTURE FAN 2A HAS PRIORITY START. CH#9 WRITTEN TO DEENERGIZE BREAKER FEEDING 2A FAN SO 1A FAN WILL RUN. LOAD VERIFIED IN SECTION 12.2.	3-28-84	[illegible]
3	12.1.20	UCVU-1A AND 1C FANS CONTINUED TO RUN IN MAX SPEED — DID NOT REVERT TO NORM SPEED	INVESTIGATION REVEALED THAT FANS ARE SINGLE SPEED. MAX AND NORM REFERS TO COOLING WATER FLOW. PROCEDURE CH#9 PROCESSED TO DELETE SPEED REFERENCE.	3-28-84	[illegible]

8406070253 840605
PDR ADOCK 05000413
E PDR

Figure 4.1-7

Rev 14
9/20/77

B001
1/1

Form SPD-1005-1

DUKE POWER COMPANY
PROCEDURE DISCREPANCIES
PROCESS RECORD

(1) ID No: IP/1/A/1350/25A

(2) STATION: _____

(3) PROCEDURE TITLE: _____

(4) DATE(S) PERFORMED: _____

(5) DISCREPANCY PROCESSING:

Item No.	Procedure Section	Description	Corrective Action	Completion Date	Signature
4	12.1.20	CONT PIPE TUNNEL BOOSTER FAN 1A WENT OFF ON B/O SIGNAL — DID NOT GO TO LOW SPEED	FAN INDICATING LIGHTS ARE OFF PRESSURE SWITCHES. SWITCHES WILL NOT MAKE UNLESS 1B FAN IS ALSO RUNNING. 1B FAN WAS TURNED ON AND 1A WILL BE VERIFIED IN SECTION 12.2.	3-28-84	[illegible]
5	12.1.20	RN PUMP 2A BREAKER DID NOT CLOSE	SLIDING LINKS J-70 AND J-71 IN 1DGLSA-1, F-36 IN 1DGLSA-2, AND D-52 IN 1EMF16 WERE OPEN. LINKS WERE CLOSED. BREAKER CLOSURE TO BE VERIFIED IN SECTION 12.2.	3-28-84	[illegible]
6	12.1.20	REACTOR MAKEUP WATER PUMP 1A DID NOT START	INVESTIGATION REVEALED PUMP DOES NOT GET B/O AUTO START SIGNAL — IT MUST BE STARTED MANUALLY. CH#9 WRITTEN TO START PUMP MANUALLY.	3-28-84	[illegible]

Figure 4.1-7

Rev 14
9/20/77

2/

Form SPD-1005-1

DUKE POWER COMPANY
PROCEDURE DISCREPANCIES
PROCESS RECORD

(1) ID No: TP/1/A/1350/25A

(2) STATION: _____

(3) PROCEDURE TITLE: _____

(4) DATE(S) PERFORMED: _____

(5) DISCREPANCY PROCESSING:

Item No.	Procedure Section	Description	Corrective Action	Completion Date	Signature
7	12.1.20	VI AIR DRYER C DID NOT START SINCE IT WAS TAGGED OUT FOR MAINTENANCE	DRYER IS TAGGED FOR MAINTENANCE. CHANGE #9 PROCESSED TO DELETE FANS LOAD FROM EVR. 13.5. THIS DOES NOT AFFECT TEST SINCE DRYER HAS NO AUTOSTART SIGNAL TO VERIFY AND IS A RELATIVELY SMALL LOAD (4 HP MOTOR)	3-28-84	[illegible]
8	12.1.20	AUX BLDG FILTER ROOM EXHAUST FAN A WOULD NOT START	INTERLOCKS WITH OTHER FANS PREVENTED START. CHANGE #9 PROCESSED TO JUMPER OUT THESE OTHER INTERLOCKS. LOAD WILL BE VERIFIED IN SECTION 12.2.	3-28-84	[illegible]
9	12.1.20	AUX BLDG UNFILTERED EXHAUST FAN 1A WOULD NOT START	SEE #8 ABOVE. SAME CORRECTIVE ACTION.	3-28-84	[illegible]

Figure 4.1-7

Rev 14
9/20/77

Form SPD-1005-1

DUKE POWER COMPANY
PROCEDURE DISCREPANCIES
PROCESS RECORD

(1) ID No: TP/1/A/1350/25A

(2) STATION: _____

(3) PROCEDURE TITLE: _____

(4) DATE(S) PERFORMED: _____

(5) DISCREPANCY PROCESSING:

Item No.	Procedure Section	Description	Corrective Action	Completion Date	Signature
10	12.1.20	AUX BLOW SUPPLY UNIT 1A WOULD NOT START	SEE #8 ABOVE. SAME CORRECTIVE ACTION.	3-28-84	[illegible]
11	12.1.22.4 12.1.22.5 12.1.22.6	1MXP, 1MXX, 1MXR, 1KPX AND 1CDB HAD NORMAL VOLTAGE PRESENT ON BUS B.	1MXP, 1MXX, 1MXR AND 1KPX HAD VOLTAGE DUE TO B/O MCC'S SWITCHING TO ALTERNATE SOURCE. 1CDB HAD VOLTAGE DUE TO BATTERY ON BUS. PROCEDURE CH #9 INCORPORATED TO REMOVE DIST B TRAIN B/O POWER SYSTEM DURING SECTION 12.2 TO VERIFY ABSENCE OF VOLTAGE ON THESE BUSES.	3-29-84	[illegible]
12	12.2	PREPARING TO DO SECTION 12.2 WHEN OPS NOTICED INCOMING BKR ON 1MXW WAS SMOKING.	WR 8265 OPS HAD BEEN WRITTEN IN 2/84. ADDITIONAL WR 87470PS WAS WRITTEN. WHILE ME HAD BEEN WORKING ON BKR IN FEB BUT WAS CLEARED TO PERFORM LINEUP FOR THIS TEST. BREAKER HAD A SHORT IN Y PHASE. BREAKER WAS REMOVED AND REPLACED.	3-29-84	[illegible]

Figure 4.1-7

Rev 14
9/20/77

4/

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: _____
Permanent/Restricted To
_____

(2) STATION: Catawba

(3) PROCEDURE TITLE: [illegible] Bus and Load Rejection Permanent Use

(4) SECTION(S) OF PROCEDURE AFFECTED: 12.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

[illegible] 2.5, [illegible] 3, [illegible] Air Blog Filtration [illegible] [illegible] Load Group #3

(6) REASON FOR CHANGE:

[illegible]

(7) PREPARED BY: [illegible] DATE: [illegible]

(8) SAFETY EVALUATION

This change:

Yes ____ No ____ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 4-1-84

(9) REVIEWED BY: [illegible] DATE: 4-1-84

Cross-Disciplinary Review By: _____ N/R: [illegible]

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: [illegible] (SRO) Date: 4-1-84
By: [illegible] Date: [illegible]

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 1

Rev 14
9/20/77

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: 10
Permanent/Restricted To

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: D/G 1A BLACKOUT AND LOAD REJECTION PROGRAM TEST

(4) SECTION(S) OF PROCEDURE AFFECTED: 12.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

SEE ATTACHED SHEET

(6) REASON FOR CHANGE:

[illegible]

(7) PREPARED BY: [illegible] DATE: [illegible]

(8) SAFETY EVALUATION

This change:

Yes ____ No ✓ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ✓ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-29-84

(9) REVIEWED BY: [illegible] DATE: 3-30-84

Cross-Disciplinary Review By: _____ N/R: N.B.

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 7

Rev 14
9/20/77

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/0/A/1350/025A
Change No: 10
Page 2 of 2

DESCRIPTION OF CHANGE:

(1) ADD STEP 12.2.6.2 "RESET D/G AUTO-CONNECTED LOAD PER COMPUTER POINT A0574 ON ENCLOSURE 13.10"

(2) ON THE BOTTOM OF ENCLOSURE 13.10 ADD THE FOLLOWING:

12.2.6.2 D/G LOAD (A0574) _____ MW ____/____
(AUTO-CONNECTED)

(3) CHANGE 12.2.3 TO READ "... USING THE VARIABLE RESPONSE PROMPTS 12.1.20.2 AND 12.2.6.2 ON ENCLOSURE 13.10".

REASON FOR CHANGE:

(1), (2) & (3) SINCE SOME LOADS WOULD NOT OPERATE IN SECTION 12.1 THE AUTO-CONNECTED LOAD WILL BE ENTERED WHEN PERFORMING SECTION 12.2

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: [illegible]
Permanent/Restricted To

(2) STATION: CFAUGA

(3) PROCEDURE TITLE: D/G 1A Blackout and Load Rejection Programming Test

(4) SECTION(S) OF PROCEDURE AFFECTED: 12.0 13.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

Supplement

(6) REASON FOR CHANGE:

Supplement

(7) PREPARED BY: [illegible] DATE: 3-28-84

(8) SAFETY EVALUATION

This change:

Yes ____ No X Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No X Requires a change to the station Technical Specifications?
Yes ____ No X Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-28-84

(9) REVIEWED BY: [illegible] DATE: 3-28-84

Cross-Disciplinary Review By: _____ N/R: N/A

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: [illegible] (SRO) Date: 3-28-84
By: [illegible] Date: 3-28-84

(11) APPROVED BY: [illegible] DATE: 4/1/84

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 5

Rev 14
9/20/77

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TO/1/35.1/25A
Change No: 9
Page 2 of 4

DESCRIPTION OF CHANGE:

(1) DELETE STEPS 12.1.22.4.7, 12.1.22.4.8, 12.1.22.4.9, 12.1.22.5.4 AND 12.1.22.6.1.

(2) ADD STEP 12.2.6.1 AS FOLLOWS:

—1— 12.2.1.1 DECONTAMINATE B/O & TRAN PACCS 1MXP, 1MXX, AND 1MXR BY TRIPPING DATA INCOMING AND ALARMS FROM BOARDS. DEPRESS ICDB BY TRIPPING BOARDS ICDB-F64A AND ICDB-F65B.

(3) ADD STEP 12.2.6.1 AS FOLLOWS:

—X— 12.2.6.1 VERIFY ABSENCE OF VOLTAGE ON TRANS B/O ~~[illegible]~~ THE BUSSES LISTED BELOW US AN A DIGITAL VOLTMETER:

—1— 12.2.6.1.1 1MXP
—1— 12.2.6.1.2 1MXX
—1— 12.2.6.1.3 1MXR
—1— 12.2.6.1.4 1KPX
—1— 12.2.6.1.5 1CDB

(4) ADD STEPS 12.2.1.2 AND 12.2.1.3 WITH INDEPENDENT VERIFICATIONS AS FOLLOWS:

—1— —1— 12.2.1.2 CLOSE 1 DUMPER FROM LINES C-1 & C-3 ON ~~[illegible]~~ LCP-011 TO PROVIDE VENTILATION DURING CONTAINMENT/PENETRATION TESTS USE FILTERED EXHAUST FANS)

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/0/B/125.4/SA
Change No: 9
Page 3 of 2

—1— —1— 12.2.1.3 PLACE A JUMPER FROM LINES H-1 TO H-2 IN 1ELCP0112 TO BYPASS FILTER ROOM EXHAUST FAN 2 RUN INDEPENDENT OF THE INTERLOCKS WITH OTHER FANS.

CAUTION: SEE NOTE FROM SECTION 8.1

(5) ADD STEPS 12.6.6 AND 12.6.7 WITH INDEPENDENT VERIFICATION AS FOLLOWS:

—1— —1— 12.6.6 REMOVE JUMPER ACROSS LINES C-1 AND C-2 IN 1ELCP-0111.

—1— —1— 12.6.7 REMOVE JUMPER ACROSS LINES H-1 AND H-2 IN 1ELCP-0112.

(6) ON ENCLOSURE 13.5 CHANGE "DEPRESS ON" TO "PUT IN AUTO" FOR PUMPS FILTER ROOM EXHAUST FAN 2 AND "PUMPS SUPPLY UNIT A" UNDER LOAD GROUP 13.

(7) ON ENCLOSURE 13.5 UNDER LOAD GROUP 13 DELETE "INSTRUMENT AIR DRYER C-DEPRESS ON"

(8) ON ENCLOSURE 13.5 UNDER LOAD GROUP 5 DELETE "NORM" FROM 1DCV0-1A AND 1DCV0-1C.

(9) ADD STEP 12.2.5.1 TO READ "VERIFY LOADS ON ENCLOSURE 13.5 WHICH ARE SPECIFIED TO BE VERIFIED IN SECTION 12.2 PRIOR"

(10) ADD NOTE TO READ "HOLD POINT IN 12.2 TO VERIFY LOADS ON ENCLOSURE 13.5."

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TOI/1/1/1350/25F
Change No: 4
Page 4 of 5

- RN Pump Shelter Vent - Fan 1A
- Cont. Pipe Tunnel Booster Fan 1A
- RN Pump 2A
- Reactor Makeup Pump 1A
- Auxiliary Feeder Room Exhaust Fan 1
- Aux Bldg Overhead Exhaust Fan 1A
- Aux Bldg Supply Unit 1A

(11) On Enclosure 13.5 change "ON" to "TURN TO ON" for Reactor Makeup Pump 1A under Lead Group 1.

(12) On Enclosure 13.5 add "Ensure 2EMXG-F02C Fan to U2 Fan 2A is OPEN" to RN Pump Shelter Vent Fan 1A under Lead Group 1.

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/1/A/1250/25
Change No: 9
Page 5 of 5

Reason for Change:

(1) (2), & (3) ORIGINAL LINE-UP FAILED TO TAKE INTO ACCOUNT B TRAIN B/O MCC & SUPPORTING TO THE BREAKER SUPPLIES. ALSO FAILED TO OPEN BATTERY BREAKER ON CDE. THE CHANGE WILL ALLOW US TO VERIFY ASSUMED AF VOLUME DURING 12.2.

(4) & (5) VA FAN INTERLOCKS WITH OTHER FANS PREVENTED LOAD GROUP 13 FANS FROM STARTING. THIS CHANGE WILL ALLOW THEM TO RUN.

(6) THOSE FANS ~~WHICH~~ DO NOT HAVE PUSH BUTTON SWITCHES. INSTEAD THE CONTROL SWITCH MUST BE TURNED TO AUTO.

(7) LOOP ROOM C IS DOWN FOR MAINTENANCE.

(8) THOSE FANS DO NOT HAVE TWO SPEEDS - ONLY A SINGLE SPEED

(9) & (10) THOSE LOADS WHICH DID NOT PROPERLY ACCURATE IN 12.1 WILL BE VERIFIED IN 12.2.

(11) RMN PUMP DOES NOT AUTO START ON B/O. IT MUST BE MANUALLY STARTED.

(12) UNIT 2 VF FAN 2A MUST BE DE-ENERGIZED TO ALLOW FAN 1A TO START.

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: [illegible]
Permanent/Restricted To

(2) STATION: Oconee

(3) PROCEDURE TITLE: 4KV Bus Out and Load Rejection Preoperational Test

(4) SECTION(S) OF PROCEDURE AFFECTED: 8.6, 13.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

[illegible]

(6) REASON FOR CHANGE:

[illegible]

(7) PREPARED BY: [illegible] DATE: [illegible]

(8) SAFETY EVALUATION

This change:

Yes ____ No ✓ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ✓ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-28-84

(9) REVIEWED BY: [illegible] DATE: 3-28-84

Cross-Disciplinary Review By: _____ N/R: N/R

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: [illegible] (SRO) Date: 3-28-84
By: [illegible] Date: [illegible]

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of ____

Rev 14
9/20/77

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: [illegible]
Permanent/Restricted To

(2) STATION: Catawba

(3) PROCEDURE TITLE: D/G 1A Blackout and Loss Reason Preparation Test

(4) SECTION(S) OF PROCEDURE AFFECTED: 13.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)
[illegible] "Train Unit Trip" and "Train Unit Trip-On" under [illegible]

(6) REASON FOR CHANGE:
[illegible]

(7) PREPARED BY: _____ DATE: _____

(8) SAFETY EVALUATION

This change:

Yes ____ No ____ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation.
As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-28-94

(9) REVIEWED BY: [illegible] DATE: 3-28-94

Cross-Disciplinary Review By: _____ N/R: N/A

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 1

Rev 14
9/20/77

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: [illegible]
Permanent/Restricted To

(2) STATION: Catawba

(3) PROCEDURE TITLE: [illegible] Test

(4) SECTION(S) OF PROCEDURE AFFECTED: 6.6, 12.1, 13.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

See attached sheet

(6) REASON FOR CHANGE:

See attached sheet

(7) PREPARED BY: [illegible] DATE: 3-28-84

(8) SAFETY EVALUATION

This change:

Yes ____ No ✓ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation.
As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-28-84

(9) REVIEWED BY: [illegible] DATE: 3-28-84

Cross-Disciplinary Review By: _____ N/R: [illegible]

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [illegible] DATE: 3/28/84

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 12

Rev 14
9/20/77

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
ESS RECORD CONTINUATION FORM

ID No: TP/1/A/1350/25A
Change No: 6
Page 2 of 2

INDEPENDENT VERIFICATION AS FOLLOWS:
PLACE A JUMPER BETWEEN E.S.F. HA-20
AND SEQUENCING LINE D-28 IN OCNSL0001
TO DISABLE STATION BLACKOUT DIT
SA VALVES.
2: SEE NOTE FOLLOWING STEP 8.1
INDEPENDENT VERIFICATION AS FOLLOWS:

REMOVE JUMPER ACROSS E.S.F. HA-20
AND LINE D-28 IN OCNSL0001.

NOW CHANGE OVER OPERATION
IKC5A FROM CLOSED TO OPEN
TO COMPLETE LINEUP THE FIRE PROTECTION (FP)
DIESEL FIRE PROTECTION JOCKEY PUMP
TO LOAD GROUP 10.

SAS A JUMPER MUST BE PLACED TO
BYPASS INTERLOCKS.
IKC5A IS A FLOWPATH VALVE

JOCKEY PUMPS NO LONGER REQUIRE
A START SIGNAL

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: [illegible]
Permanent/Restricted To

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: D/G 1A BLACKOUT AND LOAD REJECTION PERFORMANCE TEST

(4) SECTION(S) OF PROCEDURE AFFECTED: 12.0, 8.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

(6) REASON FOR CHANGE:

(7) PREPARED BY: _____ DATE: _____

(8) SAFETY EVALUATION

This change:

Yes ____ No ____ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation.
As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: _____ Date: 3-28-84

(9) REVIEWED BY: _____ DATE: 3-28-84

Cross-Disciplinary Review By: _____ N/R: N/A

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: _____ DATE: _____

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 2

Rev 14
9/20/77

F34895 (6-82)
Merly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/1/A/1350/25A
Change No: 5
Page 2 of 2

DESCRIPTION OF CHANGE:

1) ON ENCLOSURE 13.3 CHANGE "OP/1/A/1200/12, SECTION 6.4" TO "OP/1/A/1200/12, ENCLOSURE 4.3" UNDER BORON RETAINER CHECK.

2) ON ENCLOSURE 13.3 DELETE UNIT 1 N3246 (RHR NIST SUMP) FROM LIST OF UNDER BORON RETAINER SYSTEM.

3) ON ENCLOSURE 13.3, UNDER AUXILIARY BUILDING VENTILATION SYSTEM, CHANGE THE FIRST SENTENCE TO READ AS FOLLOWS:

"EACH OF THE VA SYSTEM FANS LISTED BELOW ARE OPERABLE AND CAPABLE OF WITHOUT A BUTTERFLY START SIGNAL"

ON 8/12/90 AND NOT "TURNED OVER FOR CONSTRUCTION, NOT INSTALLED" TO "X" IE554.

RESPONSE CHANGE:

(1) DP HAS BEEN REVISED SECTION 6.4 IS NOW ENCLOSURE 4.3

(2) CAS DESIRES TO CONTINUE FILLING AT THE RHR NIST AND VA AT THE NIST

(3) VA SYSTEM COMPONENT CONTROL CAN NOT BE RUN OUT OF LIMITED SYSTEM. FUNCTION OF THIS TEST IS TO VERIFY THE FANS START ON BUTTERFLY SIGNAL. A SINGLE SYSTEM LIMITED IS NOT REQUIRED.

(4) TEST RUN AT REQUIRED IN SHORT AND THIS IS COMPLETED.

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: 2
Permanent/Restricted To

(2) STATION: Catawba

(3) PROCEDURE TITLE: D/G 1A Bumpless and Load Rejection Program Test

(4) SECTION(S) OF PROCEDURE AFFECTED: 8.0, 12.C

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

See attached sheet

(6) REASON FOR CHANGE:

[illegible]

(7) PREPARED BY: [illegible] DATE: [illegible]

(8) SAFETY EVALUATION

This change:

Yes ____ No ____ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-23-84

(9) REVIEWED BY: [illegible] DATE: 3-23-84

Cross-Disciplinary Review By: _____ N/R: N/A

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: [illegible] (SRO) Date: 3-23-84
By: [illegible] Date: [illegible]

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of [illegible]

Rev 14
9/20/77

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/1/A/125/125
Change No: 4
Page 2 of 2

Description of Change:

① ADD SIMPS 8.16 AND 8.17 WITH INDEPENDENT VERIFICATION AS FOLLOWS:

—/—/— 8.16 FOR SECTIONS 12.1 THROUGH 12.2: PLACE A JUMPER ACROSS LINKS F-1 AND F-2 IN ICAT & TC BYPASS FOR PROTECTION AND SIGNATION MONITOR INTERLOCKS.

—/—/— 8.17 FOR SECTIONS 12.1 ~~AND~~ THROUGH 12.2: PLACE A JUMPER ACROSS LINKS E-54 AND G-27 IN ICAT & TC BYPASS FOR PROTECTION AND SIGNATION MONITOR INTERLOCKS.

ALSO MODIFICATION STATEMENT SAME AS STATEMENT FOLLOWING 8.1 IN PROCEDURE

② ADD SIMPS 8.18 AS FOLLOWS:

—/— 8.18 FOR SECTIONS 12.1 ~~AND~~ THROUGH 12.2: ENSURE TRAIN A AND TRAIN B SSPS CABINETS ARE IN RST.

③ ADD SIMPS 12.6.2 AND 12.6.3 WITH INDEPENDENT VERIFICATION AS FOLLOWS:

—/—/— 12.6.2 REMOVE JUMPER ACROSS SLIDING LINKS F-1 AND F-2 IN ICAT & TC.

—/—/— 12.6.3 REMOVE JUMPER ACROSS SLIDING LINKS ~~E-13~~ E-54 AND ~~E-14~~ G-27 IN ICAT & TC.

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: 3
Permanent/Restricted To

(2) STATION: Catawba

(3) PROCEDURE TITLE: D/G 1A Blackout and Load Rejection Preoperational Test

(4) SECTION(S) OF PROCEDURE AFFECTED: [illegible]

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

See attached sheets

(6) REASON FOR CHANGE:

See attached sheets

(7) PREPARED BY: [illegible] DATE: [illegible]

(8) SAFETY EVALUATION

This change:

Yes ____ No ____ Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No ____ Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-23-84

(9) REVIEWED BY: [illegible] DATE: 3/23/84

Cross-Disciplinary Review By: _____ N/R: [illegible]

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 5

Rev 14
9/20/77

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/1/A/1350/25A
Change No: 3
Page 2 of 5

DESCRIPTION OF CHANGE:

(1) ON ENCLOSURES 13.3 AND 13.5 MAKE CHANGES PER THE ATTACHED SHEETS.

(2) ON ENCLOSURE 13.5 PAGE 1 CHANGE "AUX BLDG FILTERED EXHAUST FAN" TO "AUX BLDG FILTERED EXHAUST FAN 1A"

REASON FOR CHANGE:

(1) CHANGES ARE NECESSARY TO ENSURE THAT FANS AUTOMATICALLY OPERATE PROPERLY WITH SEALED BUS AT BLACKOUT LOADING.

(2) TYPO

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

CH #3
PG. 3 of 5

ALIGNMENT OF AFFECTED SYSTEMS

___/___	1CA71	CA Pump 1A Disch To UST Dome Throttle	- Open
___/___	1CA72	CA Pump 1A Disch To UST Dome Throttle	- Open
___/___	1CA179	CA Pump 1A Disch To UST Dome Throttle - Throttled to 500 ± 50 gpm	
___/___	CA Pump 1A - Running		

Containment Ventilation System (VV)

___/___ Align the VV System as follows:

___/___ Place the following switches in AUTO on 1MC-3 AND ENSURE FANS ARE OPERATING:
VV UPR CONT RET FAN 1A
VV UPR CONT RET FAN 1C

___/___ Place the following switches on 1MC-3 to ~~OFF~~ MAX ~~[illegible]~~: AND ENSURE FANS ARE OPERATING:
VV UCVU 1A
VV UCVU 1C

___/___ Place the following damper control switches on 1MC-3 to AUTO:

Lower Containment Vent Damper 1LCVU-D-1
Lower Containment Vent Damper 1LCVU-D-3

___/___ Place the following switches on 1MC-3 in the NORM ~~[illegible]~~ position:

VV LCVU 1A MAX
VV LCVU 1C MAX

___/___ Place the following switches on 1MC-3 in the ~~[illegible]~~ HIGH position AND ENSURE FANS ARE OPERATING:

VV LCVU 1A
VV LCVU 1C

___/___ Place control switch for Pipe Tunnel Bstr Fan 1A to ~~[illegible]~~ HIGH position on 1MC-3 AND ENSURE FAN IS OPERATING.

___/___ ~~Place the control switch for~~ ENSURE THE Incore Inst Bstr Fan 1A ~~to STOP position on 1MC-3~~. IS OPERATING.

CATAWBA NUCLEAR STATION
ESF 1A F/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

CH#3
PG 4 of 5

ALIGNMENT OF AFFECTED SYSTEMS

~~Ensure the following switches on IMC-7 in the OFF position.~~

ENSURE THE FOLLOWING FANS ARE OPERATING:

CED VENT FAN #1A
CED VENT FAN #1C

Place the control switch for the Incore Inst Rm AHU 1A to the ~~[illegible]~~ MAX position on IMC-3 AND ENSURE FAN IS OPERATING

Nuclear Service Water System (RN)

___/___ Align the RN System per OP/1/A/6400/06C, Section 3.0 for the startup of Train A with the following conditions:

Place the KC Hx Discharge Valve 1RN381 in "Temp Mode".

Place the KC Hx Discharge Valve 1RN351 in "Max-Flow Mode".

1RN-87A KC Hx 1A Inlet Isol - Open

1RN-87B KC Hx 1B Inlet Isol - Open

KC Pump 1A - Running

Control Room Ventilation System (VC)

___/___ Align the VC System per OP/1/A/6450/11, Section 3.0 for Train A.

Auxiliary Building Ventilation System (VA)

___/___ Align the VA System per OP/0/A/6450/05, Section 3.0 with the following conditions or exceptions:

Ensure that modification specified in Step 8.1 has been installed.

All filtered and unfiltered exhaust and supply fans are off.

A&P HVAC Unit 1A and 1B are off.

CATAWBA NUCLEAR STATION
D.G. 1A E/C AND LOAD REJECTION
PRE-OPERATIONAL TEST
TP/1/A/1350/15A
ENCLOSURE 1

CH 3
PG 5 of 5

EQUIPMENT OPERATION

Load Group 3

CKDM Vent Fan CKDM-1A - ON ___/___
CKDM-1C - ON ___/___

Lower Containment Vent Unit LCVU-1A - ON - LOW ___/___
LCVU-1C - ON - LOW ___/___

Upper Containment Vent Unit UCVU-1A - ON - NORM ___/___
UCVU-1C - ON - NORM ___/___

Cont Pipe Tunnel Booster Fan 1A - ON - LOW ___/___

Upper Containment Air Return Fan UCAR-1A - ON ___/___
UCAR-1C - ON ___/___

Incore Instrument Tunnel Booster Fan 1A - ON ___/___

Incore Instrument Room Vent Unit 1A - ON - NORM ___/___

E/C MCC 1MXO [illegible] MXI-4C - CLOSED ___/___

B/C MCC 1MX, [illegible] 1MXI-5B - CLOSED ___/___

Load Group 4

Component Cooling Pumps 1A1 and 1A2 - ON ___/___

Load Group 7

Nuclear Service Water Pump 1A - ON ___/___

Nuclear Service Water Pump 2A - Breaker 2ETA-14 is Closed in Test Position ___/___

Load Group 8

Aux Feedwater Pump Motor 1A - ON ___/___

Load Group 1

Reactor Makeup Water Pump 1A - ON ___/___

Boric Acid Tank Room Unit Heaters - ON ___/___

E/C MCC 1MXO [illegible] MXI-1C - CLOSED ___/___

Boric Acid [illegible] Room Unit Heaters - ON ___/___

Fire Protection [illegible] Fan Motor A - ON ___/___

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: [illegible]
Change No: 2
Permanent/Restricted To

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: DIG 1A BUSES - AND LOAD REJECTION PROGRAM [illegible] TEST

(4) SECTION(S) OF PROCEDURE AFFECTED: 12.0 12.0 6.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)

SEE ATTACHED SHEET

(6) REASON FOR CHANGE:

SEE ATTACHED SHEET

(7) PREPARED BY: [illegible] DATE: 3-8-84

(8) SAFETY EVALUATION

This change:

Yes ____ No X Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No ____ Requires a change to the station Technical Specifications?
Yes ____ No X Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation. As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [illegible] Date: 3-18-84

(9) REVIEWED BY: [illegible] DATE: 3/23/84

Cross-Disciplinary Review By: _____ N/R: [illegible]

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [illegible] DATE: [illegible]

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 2

Rev 14
9/20/77

Form 34895 (6-82)
Formerly SPD - 1003 - 2A

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD CONTINUATION FORM

ID No: TP/1A/1350/25A
Change No: 2
Page 2 of 2

DESCRIPTION OF CHANGE:

① ADD TO ENCLOSURE 13.3 UNDER AUX FEEDWATER SYSTEM (CA):

1 VALVES 1CA36A, 1CA46A, 1CA52B AND 1CA46B CLOSED

② ADD TO ENCLOSURE 13.5 UNDER LOAD GROUP 1:

VALVES 1CA36A, 1CA46A, 1CA52B AND 1CA46B - OPEN 1

③ ADD NEW SECTIONS 12.0 TO 12.0 AS FOLLOWS:

NEW SECTIONS 12.1 THROUGH 12.3 ARE SEQUENTIAL AND SHOULD BE PERFORMED IN ORDER. SECTIONS 12.4 AND 12.5 ARE INDEPENDENT AND MAY BE PERFORMED PRIOR TO OR AFTER SECTIONS 12.1 THROUGH 12.3.

④ ADD "FOR SECTIONS 12.1 THROUGH 12.3" ACCESS TO THE FOLLOWING STEPS:

6.1, 6.2, 6.3, 6.6, 6.7, 6.10, 6.11, 6.14

⑤ ADD 6.14.5 TO READ "DIESEL GENERATOR 1A IS CONNECTED PARALLED WITH OFFSITE POWER" FOR SECTIONS 12.4 AND 12.5:

⑥ DELETE STEP 12.4.7

REASON FOR CHANGE:

①-② VALVES OPEN ON BLACKOUT. THEY NEED TO BE VERIFIED TO OPERATE PROPERLY IN THIS TEST.

③→⑥ THESE CHANGES ALLOW THE LOAD SEQUENCER TESTING TO BE PERFORMED INDEPENDENTLY OF THE LOADING PORTION OF THE TEST.

Form 34811 (7-81)
(Formerly SPD-1003-2)

DUKE POWER COMPANY
PROCEDURE MAJOR CHANGE
PROCESS RECORD

(1) ID No: TP/1/A/1350/22A
Change No: 1
Permanent/Restricted To

(2) STATION: CATAWBA

(3) PROCEDURE TITLE: D/G 1A BLACKOUT AND LOAD REJECTION PREOPERATIONAL TEST

(4) SECTION(S) OF PROCEDURE AFFECTED: 1.0, 11.0

(5) DESCRIPTION OF CHANGE: (Attach additional pages, if necessary.)
① ON STEP 1.7 CHANGE "E25" TO "E24"
② ON STEP 11.1 CHANGE "12.1 AND 12.1" TO "12.1 AND 12.2"

(6) REASON FOR CHANGE:
① VALVE WAS LABELED ESSENTIAL UP IN ACCEPTANCE CRITERIA, SECTION 1.7 NEEDS TO REFLECT THAT POSITION
② TWO - TIMES ACCEPTANCE CRITERIA IS MISSING IN SECTIONS 12.1 AND 12.2

(7) PREPARED BY: [signature] DATE: 3-15-84

(8) SAFETY EVALUATION

This change:

Yes ____ No X Represents a change to the station or procedures as described in the FSAR, or a test or experiment not described in the FSAR?
Yes ____ No X Requires a change to the Station Technical Specifications?
Yes ____ No X Involves an unreviewed safety question?

If the answer to any of the above is "Yes", attach a detailed explanation.
As appropriate attach a completed "Nuclear Safety Evaluation Check List" form.

By: [signature] Date: 3-15-84

(9) REVIEWED BY: Cathal L. Blakney DATE: 3-15-84

Cross-Disciplinary Review By: _____ N/R: ASB

(10) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____
By: _____ Date: _____

(11) APPROVED BY: [signature] DATE: 3/15/84

(12) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____
Reviewed/Approved By: _____ Date: _____

(13) Page 1 of 1

Rev 14
9/20/77

Form 34731 (10-81)
(Formerly SPD-1002-1)

DUKE POWER COMPANY
PROCEDURE PREPARATION
PROCESS RECORD

(1) ID No: TP/1/A/1350/25A
Change(s) 0 to 0 Incorporated

(2) STATION: Catawba

(3) PROCEDURE TITLE: D/G 1A Blackout and Load Rejection Preoperational Test

(4) PREPARED BY: Randall A. Jones / Robert S. Robinson DATE: 3-2-84

(5) REVIEWED BY: Dennis Robinson DATE: 3-6-84

Cross-Disciplinary Review By: C. G. Hugel 3-6-84 N/R: SRC 84/9

(6) TEMPORARY APPROVAL (IF NECESSARY):

By: _____ (SRO) Date: _____

By: _____ Date: _____

(7) APPROVED BY: J. W. [illegible] Date: 3/7/84

(8) MISCELLANEOUS:

Reviewed/Approved By: _____ Date: _____

Reviewed/Approved By: _____ Date: _____

CONTROL COPY

DUKE POWER COMPANY
CATAWBA NUCLEAR STATION
D/G 1A BLACKOUT AND LOAD REJECTION
PREOPERATIONAL TEST

1.0 PURPOSE

1.1 Verify proper operation of the degraded bus voltage protection on 1ETA switchgear.

1.2 Verify that:

1.2.1 D/G 1A can start automatically and energize the emergency bus with permanently connected loads within acceptable time limits.

1.2.2 The load shed feature operates properly.

1.2.3 D/G 1A can accept the B/O design loads in committed sequence and maintain voltage and frequency within acceptable limits.

1.2.4 D/G 1A Blackout auto-connected loads do not exceed the two hour rating.

1.2.5 D/G 1A operates for greater than or equal to 5 minutes while loaded with blackout loads.

1.3 Verify that the D/G can accept the B/O design loads under an accelerated sequence and maintain voltage and frequency within acceptable limits.

1.4 Verify that D/G 1A can synchronize with offsite power while connected to emergency loads, transfer these loads to the offsite power source and proceed through a shutdown sequence returning the D/G to standby.

1.5 Verify that a hot bus transfer on the B/O switchgear can be performed once synchronized with normal offsite power.

1.6 Verify that D/G 1A does not trip due to a complete loss of load.

CPI RAS

1.7 Verify that DG/1A can reject a load of ≥ ~~825~~ 834 KW without exceeding the acceptable voltage and frequency limits.

1.8 Verify that during B/O actuation, the essential and B/O trains are independent and isolated from each other.

NOTE: The sequencer logic and load sequencing time intervals are verified in TP/1/A/1350/09A - D/G 1A Load Sequencer Preoperational Test.

2.0 REFERENCES

NOTE: The latest Document Revisions (and change order numbers, if applicable) used to develop this procedure are given on Enclosure 13.1.

2.1 System Descriptions:

2.1.1 CNSD-0114-01, D/G Load Sequencer

2.1.2 CNSD-0120-01, D/G Electrical Controls

2.2 CNS FSAR:

2.2.1 Section 8.3.1.1.3, Standby Power Supplies

2.2.2 Table 8.3.1-1, Maximum loads to be supplied from one of the Redundant Engineered Safety Power Distribution System.

2.3 CNS Tech Specs 4.8.1.1.2, D/G Surveillance Requirement.

2.4 Reg Guides:

2.4.1 1.108, Preoperational Testing of D/G

2.4.2 1.9, Requirements for D/G Testing

2.4.3 1.41, Preoperational Testing of Redundant Onsite Electric Power Systems to verify load group assignments.

2.5 One Line Diagrams:

2.5.1 CN-1702-02.01, 4160V Ess. Swgr. 1ETA

2.5.2 CN-1702-04.01, 4160V B/O SWGR

2.5.3 CN-1703-01.01, 600V Ess. 1ELXA, 1ELXC

2.5.4 CN-1703-04.01, 600V B/O LC 1LXI, 1LXH

2.6 OP/1/A/6350/02, D/G Operation

3.0 TIME REQUIRED

3.1 One (1) Test Coordinator - 16 Hours

3.2 One (1) Control Room Operator - 16 Hours

3.3 One (1) Performance Technician - 16 Hours

3.4 One (1) Nuclear Equipment Operator - 16 Hours

NOTE: The preparation of this test requires lining up of several other systems.

4.0 PREREQUISITE TESTS

None

5.0 TEST EQUIPMENT

5.1 Digital Multimeter (Fluke 8600A or equivalent used only to verify absence of bus voltages)

NOTE: The D/G High Speed Visicorder on the 1DGPA Panel will be used to take data.

6.0 LIMITS AND PRECAUTIONS

6.1 Refer to limits and precautions of operating procedure OP/1/A/6350/02, Diesel Generator Operation.

7.0 REQUIRED STATION STATUS

RAJ 13-28-84 7.1 Ensure that referenced drawings and system descriptions are the latest revision in Master File or have been reviewed on Enclosure 13.1.

8.0 PREREQUISITE SYSTEM CONDITIONS

For Sections 12.1 through 12.3:

CH#2 RAJ RAJ 13-28-84 8.1 Open Link B-17 in 1ELCP0112 to reposition 1ABF-D-11, 13 and 16 (CNEE-0166-01.47)
RAJ 3/28/84

RAJ 13-28-84 RAJ 3/28/84 8.1.1 Open Link E-42 in 1ELCP116 to defeat Lossofman Auto Pump Circuitry on CA Pumps.
CH#2 RAJ

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

For Sections 12.1 through 12.3:

CH#2 RAJ 8.2 Perform the following to prevent the Blackout Motor Control Centers from transferring to their alternate sources.

RAJ 13-28-84 8.2.1 Ensure selector switch for 1LXN-4C (ALT FDR TO 1MXW) is in the MANUAL position.

RAJ 13-28-84 8.2.2 Ensure selector switch for 1LXN-5D (ALT FDR TO 1MXO) is in the MANUAL position.

RAJ 13-28-84 8.2.3 Ensure selector switch for 1LXB-5D (ALT FDR TO 1MXQ) is in the MANUAL position.

For Sections 12.1 through 12.3:

CH#2 RAJ RAJ 13-28-84 8.3 All systems that will be sequenced into operation have been filled, vented and aligned as specified in Enclosure 13.3.

RAJ 13-28-84 8.4 The Unit 1 Operational Aid Computer (OAC) is operational.

RAJ 13-28-84 8.5 The Unit 1 Diesel Generator 1A, along with all support systems, are operable and aligned for B/O actuation. D/G 1A visicorder must also be operable.

For Sections 12.1 through 12.3:

CH#2 RAJ RAJ 13-28-84 8.6 The Unit 1 D/G Load Sequencer 1A is operable.

RAJ 13-28-84 GAC 13-28-84 8.6.1 Place a jumper between fuse 1A-20 and sliding link D-26 in ocnsloop 1 to defeat S/G inlet SG valves. Initial: SIT not required 8.7.6.1
CH#6 RAJ

CH#2 RAS For Sections 12.1 through 12.3:

8.7 The following pumps are operable with no deficiencies noted. Items to be checked include oil reservoir levels, ventilation path available for motors, no mechanical interference, manual isolation valves open and no red or white tags.

RAS 1 3-28-84 8.7.1 RN Pump 1A

RAS 1 3-28-84 8.7.2 NV Pump 1A

RAS 1 3-28-84 8.7.3 KC Pumps 1A1, 1A2

RAS 1 3-28-84 8.7.4 CA Pump 1A

CH#6 RAS RAS 1 3-28-84 8.7.1 Enclosure Switch Cabinets are not in vent lineup recirculation.

RAS 1 3-28-84 8.8 Ensure that the Auxiliary Shutdown Panel Transfer Switch remains in the Control Room position throughout this test.

RAS 1 3-28-84 8.9 Ensure that the SSF transfer switch remains in the Control Room position throughout this test.

CH#2 RAS RAS 1 3-28-84 8.10 For Sections 12.1 through 12.3: Ensure electrical alignment on Enclosure 13.4 is complete.

CH#5 RAS RAS 1 3-28-84 8.11 For Sections 12.1 through 12.3: Contact I&E and verify that the equipment necessary to take the load profile for the Vital & Diesel batteries has been installed.

RAS 1 3-28-84 8.12 Ensure the following event recorder and computer points are checked out:

1ER282	1ETA Norm Inc FDR Open
1ER284	1ETA DG Bkr Closed
A0575	4KV 1ETB Bus Voltage
1ER584	SWGR 1ETA Degraded Bus Voltage Trip (Turned over from construction, not in svc.
A0574	4KV Bus ETA Feed From D/G A MW

CH#5 RAS

RAS 1 3-28-84 8.13 Record multimeter to be used for Section 12.1 information:

ID # CNIAC18973

Cal. Due Date 29 Apr 84

CH#2 RAS RAS 1 3-28-84 8.14 For Sections 12.1 through 12.3: Annunciator 1AD11.07.06 "SWGR 1ETA Degraded Bus Voltage" has been turned over from Construction.

CH#2 RAS RAS 1 3-30-84 8.15 For Sections 12.4 and 12.5: Diesel Generator 1A is operating parallel with offsite power.

9.0 TEST METHOD

The degraded bus voltage logic is verified by demonstrating the alarms and tripping functions on the normal incoming breaker to the 4160V Essential Switchgear work properly. The degraded bus voltage tripping function then initiates a Blackout Loading Sequence (committed) on the Train A Blackout and Essential Switchgears. Train B Blackout and Essential Switchgears have been de-energized for the test to verify independence and isolation from the Train A Switchgear through the use of bus voltage measurements. Proper operation of the load shed, diesel start and sequencer actuation are verified. The D/G is verified to maintain voltage and frequency within acceptable limits during and after the loading sequence. Total Blackout Auto Connected Load is verified not

CH#A RAS

RAS 1 3-28-84 RAS 3/28/84 8.16 For Sections 12.1 through 12.2: Place Auxiliary Access Links F-1 and F-2 in Place to bypass fire protection and radiation monitor initiations.

RAS 1 3-28-84 RAS 3/28/84 8.17 For Sections 12.1 through 12.2: Place Auxiliary Access Links E-54 and E-27 in Place to bypass fire protection and radiation monitor initiations.
Caution: Set not following Sect. 6.1.

CH#4 RAJ
RAJ 1-28-84 E-1E: FUNCTIONS 12.1 THROUGH 12.2: ENSURE TRAIN A AND TRAIN B SSPS CABINETS ARE IN TEST.

to exceed the two hour D/G rating. The D/G is then verified to be able to be paralleled to offsite power, transfer its loads to the offiste power source and proceed through a shutdown sequence returning it to standby status.

The degraded bus voltage logic is then verified to properly trip the 4160V Essential Switchgear alternate incoming breaker. The degraded bus voltage tripping function then initiates a blackout loading sequence (accelerated) on the Train A Blackout and Essential Switchgears. The D/G is verified to maintain voltage and frequency within acceptable limits during and after the loading sequence.

The hot bus transfer function between the normal and alternate incoming breakers to the B/O Switchgear is verified to operate properly when the D/G is paralled to the offsite power source.

Finally, two load rejection tests are performed on the D/G. First a load rejection equivalent to the largest single load ($\geq$ 834 KW) is performed followed by a full load ($\geq$ 7075 KW) rejection. During both load rejection tests D/G parameters are verified to not exceed acceptable values.

10.0 DATA REQUIRED

10.1 D/G Voltage - Visicorder

10.2 D/G Power - Visicorder

10.3 D/G Frequency - Visicorder

11.0 ACCEPTANCE CRITERIA

CH#1 RAJ

11.1 The degraded bus voltage protection circuit operates properly as described in Sections 12.1 and 12.12.

11.2 The D/G can:

11.2.1 Start automatically and energize the emergency bus with permanently connected loads in $\leq$ 11 seconds.

11.2.2 Properly load shed those loads as described in Section 12.1

11.2.3 Maintain its frequency at not less than 95% of nominal and returning it to within 2% of nominal in less than 60% of each load sequence time interval. (For both committed and accelerated loading sequences).

11.2.4 Maintaining voltage at not less than 75% of nominal and returning it to within 10% of nominal in less than 60% of each load sequence time interval. (For both committed and accelerated loading sequences).

11.2.5 Operate for greater than or equal to 5 minutes while loaded with blackout loads.

11.3 The auto connected total load to the D/G does not exceed 7617 KW.

11.4 The D/G can:

11.4.1 Synchronize with the offsite power source while the D/G is loaded with its emergency loads,

11.4.2 Transfer its loads to the offsite power source, and

11.4.3 Be restored to its standby status.

11.5 The B/O Switchgear Hot Bus transfer operates properly as described in Section 12.3.

11.6 The D/G rejects a load of ≥ 7075 KW without tripping. The D/G speed does not exceed 500 RPM during and following the rejection.

11.7 The D/G rejects a load of ≥ 834 KW while maintaining voltage at 4160 ± 420V and frequency at 60 ± 1.2 Hz.

11.8 Train A and B Essential and B/O Power Systems are independent of each other by showing the following:

11.8.1 Train B Essential Buses and B/O Buses remain without voltage during Train A operation.

12.0 PROCEDURE

CH #2 RJS

NOTE: SECTIONS 12.1 THROUGH 12.3 ARE SEQUENTIAL AND SHOULD BE PERFORMED IN ORDER. SECTIONS 12.4 AND 12.5 ARE INDEPENDENT AND MAY BE PERFORMED BEFORE OR AFTER SECTIONS 12.1 THROUGH 12.3

Initial/Date

12.1 Train A Blackout Loading (Committed Sequence) and Degraded Bus Voltage Verification (Tripping 1ETA3)

RMT / 3-28-84 12.1.1 Ensure that Prerequisite Tests, Required Station Status and Prerequisite System Conditions for this section are completed and met as required.

RMT / 3-28-84
ASB / 5/28/84 12.1.2 Open Test Switch H on test block PD located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

RMT / 3-28-84
ASB / 5/28/84 12.1.3 Open Test Switch H on test block PE located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

CAUTION: Do not leave this switch open any longer than necessary to verify annunciator. Actual B/O will occur after 10 minutes.

RAS / 3-28-84 12.1.4 Verify that annunciator 1AD11.07.06, "SWGR 1ETA Degraded Bus Voltage", alarms after approximately 40 seconds.

RAS / 3-28-84 AHB / 3/28/84 12.1.5 Close Test Switch H on test block PE located on 1EATC16.

RAS / 3-28-84 12.1.5.1 Verify annunciator 1AD11.07.06 clears.

RAS / 3-28-84 AHB / 3/28/84 12.1.6 Open Test Switch H on test block PF located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

CAUTION: Do not leave this switch open any longer than necessary to verify annunciator. Actual B/O will occur after 10 minutes.

RAS / 3-28-84 12.1.7 Verify that annunciator 1AD11.07.06, "SWGR 1ETA Degraded Bus Voltage", alarms after approximately 40 seconds.

RAS / 3-28-84 AHB / 3/28/84 12.1.8 Close Test Switch H on test block PD located on 1EATC16.

RAS / 3-28-84 12.1.8.1 Verify that annunciator 1AD11.07.06 clears.

RAS / 3-28-84 12.1.9 Open breaker 1EDF-F01F to disable D/G Load Sequencer 1B and verify loss of power by Control Room alarm.

RAS / 3-28-84 12.1.10 Open 1ETB3 (Normal Incoming Feeder to Train B Essential Switchgear) and 1GTB1 (Normal Incoming Feeder to Train B B/O Switchgear). (There should not be a breaker in 1ETB4 cubicle.)

RAS / 3-28-84 12.1.11 Open breaker 1CDB-F02I to disable 1FTB/1GTB Control Power.

12.1.12 Open the following breakers to de-energize Train B 125 VDC Vital and Diesel Power Systems:

RAS / 3-28-84 12.1.12.1 1EDB-F02A (Verify loss of voltage by meter on 1EDB)

RAS 3-28-84 12.1.12.2 1EDD-F02A (Verify loss of voltage by meter on 1EDD)

RAS 3-28-84 12.1.12.3 1DGCB Battery Breaker (Verify loss of voltage by meter on 1DGDB).

RAS 3-28-84 ASB 3/28/84 12.1.13 Open Sliding Link G-6 in Panel 1-DGLSA-1 to disable Accelerated Sequence Relays EA (AA1), and EB (AA2). This will allow the Diesel Generator Load Sequencer to load using the Committed Sequence only.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

RAS 3-28-84 12.1.14 Verify that D/G 1A is in standby and capable of operation. Have D/G Coordinating Engineer prepare the D/G Visicorder such that D/G voltage, frequency and power can be recorded.

RAS 3-28-84 12.1.15 Have I&E start Multipoint Recorder to obtain load profiles of the Vital & Diesel Batteries.

RAS 3-28-84 ASB 3/28/84 12.1.16 Open Test Switch H on test block PE located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

RAS 3-28-84 12.1.17 Verify that annunciator 1AD11.07.06, "SWGR 1ETA Degraded Bus Voltage", alarms after approximately 40 seconds.

12.1.18 After approximately 10 minutes:

RAS 3-28-84 12.1.18.1 Verify that 1ETA3 (Normal Incoming Feeder to Train A Essential Switchgear) is tripped and immediately perform Step 12.1.18.2

RAS 3-28-84 12.1.18.2 Trip 1TA4 (XFMR 1ATC Feeder Breaker).

RAS 3-28-84 12.1.18.3 Verify that 1GTA1 (Normal Incoming Feeder to Train A Blackout Switchgear) is tripped.

RAS 3-28-84 12.1.18.4 Verify that D/G Load Sequencer 1A is actuated.

RAT / 3-28-84 12.1.18.5 Verify that D/G 1A starts.

RAT / 3-28-84
ABB / 3/28/84 12.1.18.6 Close Test Switch H on test block PE loaded on 1EATC16.

RAT / 3-28-84
ABB / 3/28/84 12.1.18.7 Close Test Switch H on test block PF located on 1EATC16.

RAT / 3-28-84 12.1.18.8 Verify that event Recorder Point ER584, "SWGR 1ETA Degraded Bus Voltage Trip" has occurred.

12.1.19 Verify the following actions occur approximately 8.5 seconds after D/G start (may be verified visually or through the use of Control Room Alarms):

RAT / 3-28-84 12.1.19.1 1ETA5 (XFMR 1ETXA FDR BKR) remains closed.

RAT / 3-28-84 12.1.19.2 1ETA6 (KC PUMP MTR 1A1) is tripped.

RAT / 3-28-84 12.1.19.3 1ETA7 (KC PUMP MTR 1A2) is tripped.

RAT / 3-28-84 12.1.19.4 1ETA8 (NS PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.5 1ETA9 (ND PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.6 1ETA10 (XFMR 1ETXE FDR BKR) remains closed.

RAT / 3-28-84 12.1.19.7 1ETA11 (NI PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.8 1ETA12 (NV PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.9 1ETA13 (CA PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.10 1ETA14 (RN PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.11 1ETA15 (KF PUMP MTR 1A) is tripped.

RAT / 3-28-84 12.1.19.12 1ETA16 (XFMR 1ETXC FDR BKR) remains closed.

RAT / 3-28-84 12.1.19.13 1ETA17 (A/C COMP FDR) is tripped.

RAT / 3-28-84 12.1.19.14 Valves 1SA2 and 1SA5 open.

NOTE: Have someone stationed at 1ELXA and 1ELXC to verify the following two breakers.

RAT / 3-28-84 12.1.19.15 1ELXA-4B (NORM INC BKR) is tripped.

RAS 3-28-84 12.1.19.16 1ELXC-4B (NORM INC BKR) is tripped.

NOTE: Have someone stationed at 1LXI to verify the following breaker.

RAS 3-28-84 12.1.19.17 1LXI-5D (1CCA FDR BKR) is tripped.

RAS 3-28-84 12.1.20 Follow the following sequence of events. Verify proper equipment actuation on Enclosure 13.5.

TIME	EVENT
0 Sec	Initiation B/O
8.5 Sec	Load Shed
10.0 Sec	D/G BKR (1ETA18) Closes
11.0 Sec	1ETA2 and 1FTA1 Have Closed Load Group 1 energized.
12.0 Sec	Load Group 2 energized. NV Pump 1A starts.
15.0 Sec	Load Group 3 energized.
30.0 Sec	Load Group 6 energized. KC Pumps 1A1 and 1A2 start.
35.0 Sec	Load Group 7 energized. RN Pump 1A starts.
40.0 Sec	Load Group 8 energizes. CA Pump 1A starts.
60.0 Sec	Load Group 10 energizes.
10.0 Min	Load Group 11 energizes. Control Room and Control Room Area ventilation starts.
11.0 Min	Load Group 12 energizes. Control Room Chilled Water Compressor Motor starts.
12.0 Min	Load Group 13 energizes.

RAS 3-28-84 12.1.20.1 Allow D/G to operate for $\geq$ 5 minutes with Blackout loads connected.

RAS 3-28-84 12.1.20.2 Record D/G Auto-Connected Load per computer point A0574 on Enclosure 13.10.

12.1.21 After start verification of KF Pump 1A is complete, reset the following signal:

RAS 3-28-84 12.1.21.1 Reset D/G Load Sequencer 1A.

12.1.22 Verify absence of voltage on Train B Essential and Blackout Power Systems as follows:

RAS 3-28-84 12.1.22.1 1ETB Bus through computer point A0575 "4KV 1ETB Bus Voltage"

RAS 3-28-84 12.1.22.2 1FTB Bus using local voltmeter on 1FTB Bus.

12.1.22.3 The following Essential and B/O Load Centers through their local voltmeter:

RAS / 3-28-84 12.1.22.3.1 1ELXB

RAS / 3-28-84 12.1.22.3.2 1ELXD

RAS / 3-28-84 12.1.22.3.3 1LXH

TYPO-RAS 12.1.22.4 The following 600V Essential and B/O Motor Control Centers using a Digital Multimeter:

RAS / 3-28-84 12.1.22.4.1 1EMXB

RAS / 3-28-84 12.1.22.4.2 1EMXD

RAS / 3-28-84 12.1.22.4.3 1EMXF

RAS / 3-28-84 12.1.22.4.4 1EMXJ

RAS / 3-28-84 12.1.22.4.5 1EMXL

RAS / 3-28-84 12.1.22.4.6 1EMXR

~~___ / ___ 12.1.22.4.7 1MXP~~

CH #9 RAS ~~___ / ___ 12.1.22.4.8 1MXX~~

~~___ / ___ 12.1.22.4.9 1MXR~~

12.1.22.5 The following 120 VAC Essential and B/O Power Panel Boards using a Digital Multimeter:

RAS / 3-28-84 12.1.22.5.1 1EKPJ

RAS / 3-28-84 12.1.22.5.2 1EKPB

RAS / 3-28-84 12.1.22.5.3 1EKPF

~~___ / ___ 12.1.22.5.4 1KPX~~

CH #9 RAS 12.1.22.6 The following 125VDC distribution centers through their local voltmeter:

~~___ / ___ 12.1.22.6.1 1CDB~~

RAS / 3-28-84 12.1.22.6.2 1EDB

RAS / 3-28-84 12.1.22.6.3 1EDD

RAS / 3-28-84 12.1.22.6.4 1DGDB

RAS / 3-28-84 12.1.23 Transfer breaker from 1ETA3 cubicle to 1ETA4 cubicle.

RAS / 3-28-84 12.1.24 Close breaker 1TA4 (XFMR 1ATC FDR BKR).

RAS / 3-28-84 12.1.25 Have Operations parallel D/G 1A following OP/1/A/6350/02, Section 5.0.

NOTE: Train B Essential and Blackout Power Systems may be re-energized at this time.

RAS / 3-28-84 12.1.26 Attach and label a copy of the Visicorder chart to this procedure as Enclosure 13.6 "D/G Parameters During Committed Sequence Loading". Record actuation times for event recorder points 1ER282 and 1ER284 on Enclosure 13.10.

RAS / 3-28-84 ABB / 3/28/84 12.1.27 Close Sliding Link G-6 in 1DGLSA-1.

RAS / 3-28-84 12.1.28 Have Operations reduce D/G 1A load and then shutdown D/G 1A per OP/1/A/6350/02, Section 5.0.

12.2 Train A Blackout Loading (Accelerated Sequence) and Degraded Bus Voltage Verification (Tripping 1ETA4).

RAS 3-31-84
RAS / 3-28-84 12.2.1 Verify that D/G 1A is in standby and capable of operation. Have D/G Coordinating Engineer prepare the D/G Visicorder such that D/G voltage, frequency and power can be recorded.

RAS 3-31-84
C-11-84 RAS / 3-28-84 12.2.1.1 De-energize B/D B-term incs's inter, main, main xmr by tripping their xmr and alternate feeder breakers. De-energize 1CDB by tripping breakers 1CDB-F04A and 1CDB-F05B.

RAS / 3-31-84 ABB / 3/31/84 12.2.2 Open Test Switch H on test block PD located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

RAS / 3-31-84 ABB / 3/31/84 12.2.3 Open Test Switch H on test block PE located on 1EATC16.

CAUTION: If performance of this procedure is suspended for any reason for a period exceeding 24 hours, this modification must be returned to normal, or the proper station modification procedure must be implemented per Station Directive 4.4.3.

12.2.3 After approximately 10 minutes:

RAS / 3-31-84 12.2.4.1 Verify that 1ETA4 (Alternate Incoming Feeder to Train A Essential Switchgear) is tripped.

RAS 3-31-84 ABB 3/31/84
ABB / 3/28/84 KHB / 3/28/84 12.2.1.2 Place a jumper from lines C-6 to C-3 in 1ELP-011 to permit unfiltered exhaust fans to start (prevents interlocks with filtered exhaust fans)

RAS 3-31-84 ABB 3/31/84
ABB / 3/28/84 KHB / 3/28/84 12.2.1.3 Place a jumper from lines H-1 to H-2 in 1ELP011270 allow filt. room exhaust fan run independently of the interlocks with other fans - caution: [illegible]

RAS / 3-31-84 — 12.2.4.2 Verify that D/G Load Sequencer 1A is actuated.

RAS / 3-31-84 — 12.2.4.3 Verify that D/G 1A starts.

RAS / 3-31-84 ~~RAS / 3-RAS~~ ASS 3/31/84 — 12.2.4.4 Close Test Switch H on test block PD located on 1EATC16.

RAS / 3-31-84 ~~RAS~~ ~~ASS / 3/31/84~~ ~~ASS~~ ASS — 12.2.4.5 Close Test Switch H on test block PE located on 1EATC16.

RAS / 3-31-84 — 12.2.5 Verify sequencer sheds loads and commences loading sequence.

CIRCUITS RAS / 3-31-84

12.2.5.1 VERIFY LOADS ON ENCLOSURE 13.5 WHICH ARE SPECIFIED TO BE VERIFIED IN SECTION 12.2 OPERATE.

RAS / 3-31-84 — 12.2.6 Allow the sequencer to complete its loading sequence.

CIRCUIT 9 RAS

12.2.6.1 VERIFY ABSENCE OF VOLTAGE ON TRAIN B B/C BUSSES USING PORTABLE DIGITAL VOLTMETER.

RAS / 3-31-84 — 12.2.7 After loading completion, reset D/G Load Sequencer 1A.

RAS / 3-31-84 — 12.2.8 Transfer breaker from 1ETA4 cubicle to 1ETA3 cubicle.

RAS / 3-31-84 — 12.2.9 Have Operations parallel D/G 1A following OP/1/A/6350/02, Section 5.0.

RAS / 3-31-84 — 12.2.10 Attach and label a copy of the Visicorder chart to this procedure as Enclosure 13.7 "D/G Parameters During Accelerated Sequence Loading".

RAS / 3-31-84

12.2.6.2 RECORD DIESEL AND CONVERTER LOAD PER COMPUTER POINT A0574 ON ENCLOSURE 13.16.

12.3 Blackout Switchgear 1GTA Hot Bus Transfer Verfication

RAS / 3-31-84 — 12.3.1 Ensure Diesel Generator 1A is still operating paralled with offsite power.

RAS / 3-31-84 — 12.3.2 Depress the close pushbutton for 1GTA1 (Normal Incoming Feeder to 1FTA Blackout Switchgear).

RAS / 3-31-84 — 12.3.3 Verify 1GTA1 closes.

RAS / 3-31-84 — 12.3.4 Verify 1ETA2 and 1FTA1 breakers have tripped.

12.4 Diesel Generator Load Rejection Verification (Equivalent to Largest Single Load)

RAS / 3-30-84 — 12.4.1 Ensure Diesel Generator 1A is still operating paralleled with offsite power.

RAS / 3-30-84 — 12.4.2 Adjust Diesel Generator load to ≥ 834 KW. Record load per computer point A0574 on Enclosure 13.10.

RAS / 3-30-84 — 12.4.3 Start visicorder to monitor D/G voltage, frequency and power.

RAS / 3-30-84 — 12.4.4 Trip 1ETA18 (D/G 1A Breaker).

~~RAS / 3-31-84~~ 12.2.6.1.1 1MXP
~~RAS / 3-31-84~~ 12.2.6.1.2 1MXX
~~RAS / 3-31-84~~ 12.2.6.1.3 1MXR
~~RAS / 3-31-84~~ 12.2.6.1.4 1KPX
~~RAS / 3-31-84~~ 12.2.6.1.5 1KPR

RAT / 3-30-84 12.4.5 Stop Visicorder.

RAT / 3-30-84 12.4.6 Attach and label a copy of the Visicorder chart to this procedure as Enclosure 13.8 "D/G Parameters During ≥ 834 KW Load Rejection".

C.H.#2 RAT ~~/ 12.4.7 Have Operations parallel D/G 1A following OP/1/A/6350/02, Section 5.0.~~

12.5 Diesel Generator Load Rejection Verification (Full Load)

RAT / 3-30-84 12.5.1 Ensure Diesel Generator 1A is still operating paralleled with offsite power.

RAT / 3-30-84 12.5.2 Adjust Diesel Generator Load to ≥ 7075 KW. Record load per Computer point A0574 on Enclosure 13.10.

RAT / 3-30-84 12.5.3 Start Visicorder to monitor D/G Voltage, Frequency and Power.

RAT / 3-30-84 12.5.3 Trip 1ETA18 (D/G 1A Breaker)

RAT / 3-30-84 12.5.5 Stop Visicorder.

RAT / 3-30-84 12.5.6 Attach and label a copy of the Visicorder chart to this procedure as Enclosure 13.9 "D/G Parameters During Full Load (≥ 7075 KW) Rejection".

12.6 Restoration of Modifications

C.H.#4 RAT ASB / 3/31/84 12.6.1 Close link B-17 in 1ELCP0112.
RAT / 3/31/84

ASB 3/31/84 RAT / 3/31/84 12.6.2 Remove jumper across sliding links F-1 and F-2 in 1ELTCE.

12.7 Acceptance Criteria Verification

RAT / 4-1-84 12.7.1 Verify Acceptance Criteria 11.1 is satisfied as demonstrated in Sections 12.1 and 12.2.

12.7.2 Verify Acceptance Criteria 11.2 as follows:

RAT / 4-1-84 12.7.2.1 Verify 11.2.1 is satisfied demonstrated in Section 12.1 and documented on Enclosure 13.10.

RAT / 4-1-84 12.7.2.2 Verify 11.2.2 and 11.2.5 are satisfied as demonstrated in Section 12.1.

RAT / 4-1-84 12.7.2.3 Verify 11.2.3 and 11.2.4 are satisfied by using the Visicorder Printouts attached as Enclosure 13.6 and 13.7.

C.H.#10 RAT RAT / 4-1-84 12.7.3 Verify Acceptance Criteria 11.3 is satisfied using the values recorded on Enclosure 13.10.
For steps 12.1.2.2 and 12.7.6.2

C.H.#4 RAT RAT / 4-1-84 12.7.4 Verify Acceptance Criteria 11.4 is satisfied as demonstrated in Section 12.1.

ASB 3/31/84 RAT / 3-30-84 12.6.3 Remove jumper across sliding links E-54 and G-27 in 1ELTCE.
RAT / 3/31/84 ASB / 3/31/84 12.6.4 Remove jumper across fuse HA-20 including D-28 in OCANSL 0001. C.H.#8 RAT
C.H.#6 RAT ASB 12/31/84 RAT / 3/31/84 12.6.5 Close link E-42 in 1ELTCE. (See attached sheet for 12.6.6 / 12.6.7)

C1+49 RMS

ASB / 3/31/84 RMS / 3-31-84 / 2.6-6 Remove jumper across links C-6 and C-33 in 1RCP-0111.

ASB / 3/31/84 RMS / 3-31-84 / 2.6.7 Remove jumper across links H-1 and H-2 in 1RCP0112.

RMS / 4-1-84 12.7.5 Verify Acceptance Criteria 11.5 is satisfied as demonstrated in Section 12.3.

RMS / 4-1-84 12.7.6 Verify Acceptance Criteria 11.6 is satisfied by using the Visicorder Printout attached as Enclosure 13.8 and Enclosure 13.10.

RMS / 4-1-84 12.7.7 Verify Acceptance Criteria 11.7 is satisfied by using the Visicorder Printout attached as Enclosure 13.9 and Enclosure 13.10.

RMS / 4-1-84 12.7.8 Verify Acceptance Criteria 11.8 is satisfied as demonstrated in Section 12.1.

NOTE: Upon completion of this test, a Work Request should be generated to have I&E place annunciator 1AD11.07.06 in service.

13.0 ENCLOSURES

13.1 Document Revisions

13.2 Reverification Form

13.3 System Lineup

13.4 Electrical Alignment

13.5 Equipment Operation

13.6 D/G Parameters During Committed Sequence Loading

13.7 D/G Parameters During Accelerated Sequence Loading

13.8 D/G Parameters During $\geq$ 834 KW Load Rejection

13.9 D/G Parameters During Full Load ($\geq$ 7075 KW) Rejection

13.10 Event Recorder Actuation Times and D/G Load Values

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1550/25 A
ENCLOSURE 13.1

DOCUMENT REVISIONS

Documents listed below are referenced in Section 2.0. Verify the latest indicated revision number agrees with the latest revision in the Master File. If any reference is out of date, a qualified reviewer must review the current revision to ensure that the revision will not affect the performance of this procedure or ensure that adequate procedure changes are made if a revision would affect the procedure.

Document this review on this enclosure by filling in the reviewed revision (and change order number if applicable), reviewer's name and date of review.

2.1.1 CNSD-0114-01 Rev. 6				2.1.2 CNSD-0120-01 Rev. 3				2.2.1 FSAR 8.3.1.1.3 Rev. 7				2.2.2 FSAR Table 8.3.1-1 Rev. 7				2.3 Tech Spec 4.8.1.1.2 Rev. 3			
Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date
7	–	RAJ	3-28-84					8	–	RAJ	3-28-84	8	–	RAJ	3-28-84				

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.1

DOCUMENT REVISIONS

Documents listed below are referenced in Section 2.0. Verify the latest indicated revision number agrees with the latest revision in the Master File. If any reference is out of date, a qualified reviewer must review the current revision to ensure that the revision will not affect the performance of this procedure or ensure that adequate procedure changes are made if a revision would affect the procedure.

Document this review on this enclosure by filling in the reviewed revision (and change order number if applicable), reviewer's name and date of review.

2.4.1 Reg. Guide 1.108 Rev. 1				2.4.2 Reg. Guide 1.9 Rev. 2				2.4.3 Reg Guide 1.41 Issued 3/16/73				2.5.1 CN-1702-02.01 Rev. 14				2.5.2 CN-1702-04.01 Rev. 9			
Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350.25A
ENCLOSURE 13.1

DOCUMENT REVISIONS

Documents listed below are referenced in Section 2.0. Verify the latest indicated revision number agrees with the latest revision in the Master File. If any reference is out of date, a qualified reviewer must review the current revision to ensure that the revision will not affect the performance of this procedure or ensure that adequate procedure changes are made if a revision would affect the procedure.

Document this review on this enclosure by filling in the reviewed revision (and change order number if applicable), reviewer's name and date of review.

2.5.3 CN-1703-01.01 Rev. 3				2.5.4 CN-1703-04.01 Rev. 8				2.6 OP/1/A/6350/02 Ch. #2 Approval: 1-30-84											
Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date	Rev. No.	CO No.	Review by	Date

CATAWBA NUCLEAR STATION
D/A 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.2

REVERIFICATION FORM

12.1.1 RAS 13.31-84	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____
____/____	____/____	____/____	____/____	____/____

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

ALIGNMENT OF AFFECTED SYSTEMS

Chemical Volume and Control System (NV)

RAS / 3-28-84 Align the Boric Acid Transfer Pump 1A for Recirculation per OP/1/A/6150/09, Section 9.0.

RAS / 3-28-84 Align the NV System per OP/1/A/6200/01, Enclosure 16.1 with the following exceptions or conditions:

RAS / 3-28-84 1NV294 NV Pumps A&B Disch Flow Cntrl - Closed

RAS / 3-28-84 1NV293 NV Pumps A&B Disch Cntrl Isol - Closed

RAS / 3-28-84 1NV202B NV Pump A&B Recirc Isol - Open

RAS / 3-28-84 1NV203A NV Pump A&B Recirc Isol - Open

RAS / 3-28-84 1NV252A NV Pump Suct From FWST - Closed

RAS / 3-28-84 1NV253B NV Pump Suct From FWST - Closed

RAS / 3-28-84 1NI9A CCP To C-Leg Disch Isol - Closed

RAS / 3-28-84 1NI10B CCP To C-Leg Disch Isol - Closed

RAS / 3-28-84 NV Pump 1A - Running

Component Cooling System (KC)

RAS / 3-28-84 Align the KC System per OP/1/A/6200/05, Section 3.0 for Train A operation with the following conditions or exceptions:

CHANGE RAS

RAS / 3-28-84 1KC56A KC TO ND Hx 1A Sup Isol - ~~closed~~ OPEN

RAS / 3-28-84 1KC81B KC To ND Hx 1B Sup Isol - Closed

RAS / 3-28-84 KC Pumps 1A1 and 1A2 - Running

Auxiliary Feedwater System (CA)

RAS / 3-28-84 Align the CA System for standby readiness per OP/1/A/6250/02, Section 3.0 with the following exceptions or conditions:

CHANGE RAS

RAS / 3-28-84 CA Pump 1A Auto Start - ~~Defeated~~ RESET

RAS / 3-28-84 CA Sys Vlv Ctrl Train A & B - Reset

RAS / 3-28-84 Valves 1SA2 and 1SA5 Closed

CHANGE RAS

RAS / 3-28-84 VALVES 1CA36A, 1CA48A, 1CA52B AND 1CA64B CLOSED

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

ALIGNMENT OF AFFECTED SYSTEMS

RAT 3-28-84 1CA71 CA Pump 1A Disch To UST Dome Throttle - Open

RAT 3-28-84 1CA72 CA Pump 1A Disch To UST Dome Throttle - Open

RAT 3-28-84 1CA179 CA Pump 1A Disch To UST Dome Throttle - Throttled to 500 ± 50 gpm

RAT 3-28-84 CA Pump 1A - Running

Containment Ventilation System (VV)

RAT 3-28-84 Align the VV System as follows:

RAT 3-28-84 Place the following switches in AUTO on 1MC-3 AND ENSURE FANS ARE OPERATING:
VV UPR CONT RET FAN 1A
VV UPR CONT RET FAN 1C

RAT 3-28-84 Place the following switches on 1MC-3 to ~~OFF.~~ MAX AND ENSURE FANS ARE OPERATING:
VV UCVU 1A
VV UCVU 1C

RAT 3-28-84 Place the following damper control switches on 1MC-3 to AUTO:

Lower Containment Vent Damper 1LCVU-D-1
Lower Containment Vent Damper 1LCVU-D-3

CH #3 RAT

RAT 3-28-84 Place the following switches on 1MC-3 in the NORM position:

VV LCVU 1A MAX
VV LCVU 1C MAX

RAT 3-29-84 Place the following switches on 1MC-3 in the ~~OFF~~ HIGH position AND ENSURE FANS ARE OPERATING:

VV LCVU 1A
VV LCVU 1C

RAT 3-28-84 Place control switch for Pipe Tunnel Bstr Fan 1A to ~~OFF~~ HIGH position on 1MC-3 AND ENSURE FAN IS OPERATING.

RAT 3-28-84 ~~Place the control switch for~~ ENSURE THE Incore Inst Bstr Fan 1A ~~to STOP position on 1MC-3.~~ IS OPERATING.

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

ALIGNMENT OF AFFECTED SYSTEMS

CH#3 KLD

RAT / 3-28-84 ENSURE THE FOLLOWING FANS ARE OPERATING - ~~Place the following switches on 1MC-3 in the OFF position:~~

CRD VENT FAN #1A
CRD VENT FAN #~~1~~1C

RAT / 3-28-84 Place the control switch for the Incore Inst Rm AHU 1A to the ~~OFF~~ MAX position on 1MC-3 AND ENSURE FAN IS OPERATING.

Nuclear Service Water System (RN)

RAT / 3-28-84 Align the RN System per OP/1/A/6400/06C, Section 3.0 for the startup of Train A with the following conditions:

RAT / 3-28-84 Place the KC Hx Discharge Valve 1RN291 in "Temp Mode".

RAT / 3-28-84 Place the KC Hx Discharge Valve 1RN351 in "Mini-Flow Mode".

RAT / 3-28-84 1RN287A KC Hx 1A Inlet Isol - Open

RAT / 3-28-84 1RN347B KC Hx 1B Inlet Isol - Open

RAT / 3-28-84 RN Pump 1A - Running

Control Room Ventilation System (VC)

RAT / 3-28-84 Align the VC System per OP/1/A/6450/11, Section 3.0 for Train A.

Auxiliary Building Ventilation System (VA)

CH#5 RAT

RAT / 3-28-84 ENSURE THE VA SYSTEM FANS LISTED BELOW ARE OPERABLE AND SUPPLY TO BE ALIGNED ~~Align the VA System per OP/0/A/6450/03, Section 3.0 with the following conditions or exceptions:~~ A BLACKOUT START SIGNAL

RAT / 3-28-84 Ensure that modification specified in Step 8.1 has been installed.

RAT / 3-28-84 All filtered and unfiltered exhaust and supply fans are off.

RAT / 3-28-84 ASP HVAC Unit 1A and 1B are off.

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.3

ALIGNMENT OF AFFECTED SYSTEMS

Boron Recycle System (NB)

CH#5 RAS

RAS / 3-28-84 Align the Nb System for recirculation of RMWST per OP/1/A/6200/12, ~~Section 6.4~~ Enclosure 4.3 with the following conditions or exceptions:

RAS / 3-28-84	1NB459	RMWST Pmp Disch To Aux Bldg Flush Hdr	- Closed
RAS / 3-28-84	1NB274	RMWST Pmp Disch To PRT	- Closed
RAS / 3-28-84	1NB279	RMWST Pmp Disch To Fuel Pool	- Closed
CH#5 RAS	~~/ 1NB246~~	~~RMWST Inlet~~	~~Closed~~
RAS / 3-28-84	1NB199	RMW Pump Disch To NB Evap	- Closed
RAS / 3-28-84	1WL915	NB Evap Emer Xover Flush Supply	- Closed
RAS / 3-28-84	1WG211	RMWST To WG Decay Tanks Drain Pump	- Closed
RAS / 3-28-84	1NV230	RMW Pump Disch To NV Pumps	- Closed

CH#6 RAS

~~Fire Protection (RF)~~

~~/ Jockey Pump Motor A in Standby, Jockey Pump Motors B and C Off.~~

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.4

ELECTRICAL ALIGNMENT

1ETA-4160V Switchgear

Breaker No.	Name	Position	
2	Alt. Feeder B/O 1FTA-1	Oper - Open	RAS / 3-28-84
3	Normal Incoming	Oper - Closed	RAS / 3-28-84
4	Alternate Incoming	No Bkr in Cubicle	RAS / 3-28-84
5	1ETXA Feeder	Oper - Closed	RAS / 3-28-84
6	KC Pump 1A1	Oper - Closed	RAS / 3-28-84
7	KC Pump 1A2	Oper - Closed	RAS / 3-28-84
8	NS Pump 1A	Test - Closed	RAS / 3-28-84
9	ND Pump 1A	Test - Closed	RAS / 3-28-84
10	1ETXE Feeder	Oper - Closed	RAS / 3-28-84
11	NI Pump 1A	Test - Closed	RAS / 3-28-84
12	NV Pump 1A	Oper - Closed	RAS / 3-28-84
13	CA Pump 1A	Oper - Closed	RAS / 3-28-84
14	RN Pump 1A	Oper - Closed	RAS / 3-28-84
15	KF Pump 1A	Test - Closed	RAS / 3-28-84
16	1ETXC Feeder	Oper - Closed	RAS / 3-28-84
17	A/C Compressor A	Oper - Closed	RAS / 3-28-84
18	DG1A	Oper - Open	RAS / 3-28-84

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.4

ELECTRICAL ALIGNMENT

1ELXA - 600V Load Center

Breaker No.	Name	Position	
4B	Normal Incoming	Oper - Closed	RAF 13-28-84
4C	1EMXA Feeder	Oper - Closed	RAF 13-28-84
4D	Not Used		
5A	1EMXC Feeder	Oper - Closed	RAF 13-28-84
5B	1EMXG Feeder	Oper - Closed	RAF 13-28-84
5C	Not Used		
5D	Not Used		
6C	1EMXE Feeder	Oper - Closed	RAF 13-28-84
6D	Not Used		
6B	Alternate Incoming	Oper - Open	RAF 13-28-84

1ELXC - 600V Load Center

Breaker No.	Name	Position	
4B	Normal Incoming	Oper - Closed	RAF 13-28-84
4C	1EMXI Feeder	Oper - Closed	RAF 13-28-84
4D	Not Used		
5C	1EMXK Feeder	Oper - Closed	RAF 13-28-84
5D	Not Used		
5B	Alt. Incoming	Oper - Open	RAF 13-28-84

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.4

ELECTRICAL ALIGNMENT

600V - Essential and Blackout Motor Control Centers

NOTE: The maximum number of breakers possible on the following 600V MCC are to be closed. Incoming breaker should be closed and MCC energized.

MCC Number	
1EMXA	RAJ / 3-28-84
1EMXC	RAJ / 3-28-84
1EMXE	RAJ / 3-28-84
1EMXG	RAJ / 3-28-84
1EMXI	RAJ / 3-28-84
1EMXK	RAJ / 3-28-84
1EMXO	RAJ / 3-28-84
1EMXQ	RAJ / 3-28-84
1EMXS	RAJ / 3-28-84
1MXO	RAJ / 3-28-84
1MXQ	RAJ / 3-28-84
1MXW	RAJ / 3-28-84

120 VAC/125 VDC Vital Power

NOTE: The maximum number of circuit breakers possible on the following 120 VAC/125 VDC essential, vital and blackout instrument and control power panelboards and distribution centers are to be closed. Panelboards and distribution controls should be energized.

Power Panelboard No.	
1EKPE	RAJ / 3-28-84
1EKPG	RAJ / 3-28-84

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.4

ELECTRICAL ALIGNMENT

Power Panelboard No.	
1EKPI	RAF 13-28-84
1EKPY	RAF 13-28-84
1EDA	RAF 13-28-84
1EDC	RAF 13-28-84
1DGDA	RAF 13-28-84
1ERPA	RAF 13-28-84
1ERPC	RAF 13-28-84
1CDA	RAF 13-28-84
1KPW	RAF 13-28-84

Unit 2 Breakers

2ETA Breaker No. 14 Test-Open RAF 13-28-84

1FTA - 4160V Switchgear

Breaker No.	Name	Position	
1GTA1	Swgr 1FTA Norm Inc Bkr	Oper - Closed	RAF 13-28-84
1FTA1	Swgr 1FTA Alt Inc Bkr	Oper - Open	RAF 13-28-84
1FTA2	Spare		
1FTA3	XFMR 1LXI Fdr Bkr	Oper - Closed	RAF 13-28-84

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.4

ELECTRICAL ALIGNMENT

1LXI - 600V Load Center

Breaker No.	Name	Position	
4B	Inc Bkr	Oper - Closed	RAS / 3-28-84
4C	MCC 1MXO Fdr Bkr	Oper - Closed - Auto	RAS / 3-28-84
5A	VI Comp A	Oper - In Base	RAS / 3-28-84
5B	MCC 1MXQ Fdr Bkr	Oper - Closed - Auto	RAS / 3-28-84
5C	MCC 1MXW Fdr Bkr	Oper - Closed - Auto	RAS / 3-28-84
5D	1CCA Fdr Bkr	Oper - Closed	RAS / 3-28-84
6A	Spare		
6B	Spare		
6C	PZR Htr Pwr Pnl 1A	Open	RAS / 3-28-84
6D	Spare		

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.5

EQUIPMENT OPERATION

Load Group 1

1ELXA Compt #4B - Closed — RAS / 3-28-84

1ELXC Compt #4B - Closed — RAS / 3-28-84

Boric Acid Transfer Pump 1A - ON — RAS / 3-28-84

Aux Bldg Pump Room Heater-Demister - ON — ASB / 3/28/84

CH#3 RAS Aux Bldg Filtered Exhaust Fan 1A - ON — ASB / 3/28/84

Switchgear Room Air Handling Units

1SGR-AHU-1 - ON — ASB / 3/28/84

TYPOS RAS 2XSGR-AHU-~~2~~1 - ON — ASB / 3/28/84

1SGR-AHU-3 - ON — ASB / 3/28/84

TYPOS RAS 2XSGR-AHU-~~2~~3 - ON — ASB / 3/28/84

VF Filter Train Moisture Eliminator Heater - ON — ASB / 3/28/84

VF Filter Train Exhaust Fan 1A1 and 1A2 - ON — ASB / 3/28/84

Aux Shutdown Panel A/C Unit 1A - ON — RAS / 3-28-84

CH#9 RAS RN Pump Structure Vent Fan 1A - ON (VERIFY ACTUATION, N12.2) (ENSURE 2EMXQ-F022 FAILS TO V2 FAN 2A IS OPEN) — RAS / 3-31-84

D/G 1A Bldg Vent Fan Motors 1A1, 1A2 - ON — ASB / 3/28/84

Control Room Air Handling Unit A - ON — ASB / 3/28/84

Control Room Area Filter Train Pressure Fan A - ON — ASB / 3/28/84

Control Room Area Moisture Separator Heater A - ON — ASB / 3/28/84

CH#2 RAS VALVES 1CA3EA, 1CA4EA, 1CA52B AND 1CA64B - OPEN — RAS / 3-28-84

Load Group 2

Centrifugal Charging Pump 1A - ON — ASB / 3/28/84

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.5

EQUIPMENT OPERATION

Load Group 3

CRDM Vent Fan — CRDF-1A - ON — RAS / 3-28-84
CRDF-1C - ON — RAS / 3-28-84

Lower Containment Vent Unit — LCVU-1A - ON — LOW — RAS / 3-28-84
LCVU-1C - ON — LOW — RAS / 3-28-84

CH#0 RAS

Upper Containment Vent Unit — UCVU-1A - ON ~~NORM~~ — RAS / 3-28-84
UCVU-1C - ON ~~NORM~~ — RAS / 3-28-84

CH#3 RAS

CH#8 RAS

Cont Pipe Tunnel Booster Fan 1A - ON — LOW (VERIFY ACTUATION IN 12.2) — RAS / 3-31-84

Upper Containment Air Return Fan — UCAR-1A - ON — RAS / 3-28-84
UCAR-1C - ON — RAS / 3-28-84

Incore Instrument Tunnel Booster Fan 1A - ON — RAS / 3-28-84

Incore Instrument Room Vent Unit 1A - ON — NORM — RAS / 3-28-84

B/O MCC 1MXO FDR Bkr 1LXI-4C - CLOSED — RAS / 3-28-84

B/O MCC 1MXQ FDR Bkr 1LXI-5B - CLOSED — RAS / 3-28-84

Load Group 6

Component Cooling Pumps 1A1 and 1A2 - ON — RAS / 3-28-84

Load Group 7

Nuclear Service Water Pump 1A - ON — RAS / 3-28-84

CH#9 RAS

Nuclear Service Water Pump 2A - Breaker 2ETA-14 is Closed in Test Position (VERIFY ACTUATION IN 12.2) — RAS / 3-31-84

Load Group 8

Aux Feedwater Pump Motor 1A - ON — RAS / 3-28-84

Load Group 10

CH#9 RAS

Reactor Makeup Water Pump 1A - ON TURN TO (VERIFY ACTUATION IN 12.2) — RAS / 3-28-84

CH#7 RAS

~~Boric Acid Tank Room Unit Heaters - ON~~ — ___ / ___

B/O MCC 1MXW FDR Bkr 1LXI-5C - CLOSED — RAS / 3-28-84

CH#7 RAS

~~Boric Acid Filter Room Unit Headers - ON~~ — ___ / ___

CH#6 RAS

~~Fire Protection Jockey Pump Motor A - ON~~ — ___ / ___

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.5

EQUIPMENT OPERATION

Load Group 11

Control Room Area Air Handling Unit A - ON RAS / 3-28-84

Control Room Chilled Water Pump A - ON RAS / 3-28-84

Control Room Chiller Compress Oil Pump A - ON RAS / 3-28-84

Battery Room Exhaust Fan - ON RAS / 3-28-84

Load Group 12

Control Room Area Chiller A - ON RAS / 3-28-84

Load Group 13

Instrument Air Compressor A - ON RAS / 3-28-84

Instrument Air Dryer A - DEPRESS ON RAS / 3-28-84

CH#9 RAS ~~Instrument Air Dryer C~~ - DEPRESS ON ~~/~~

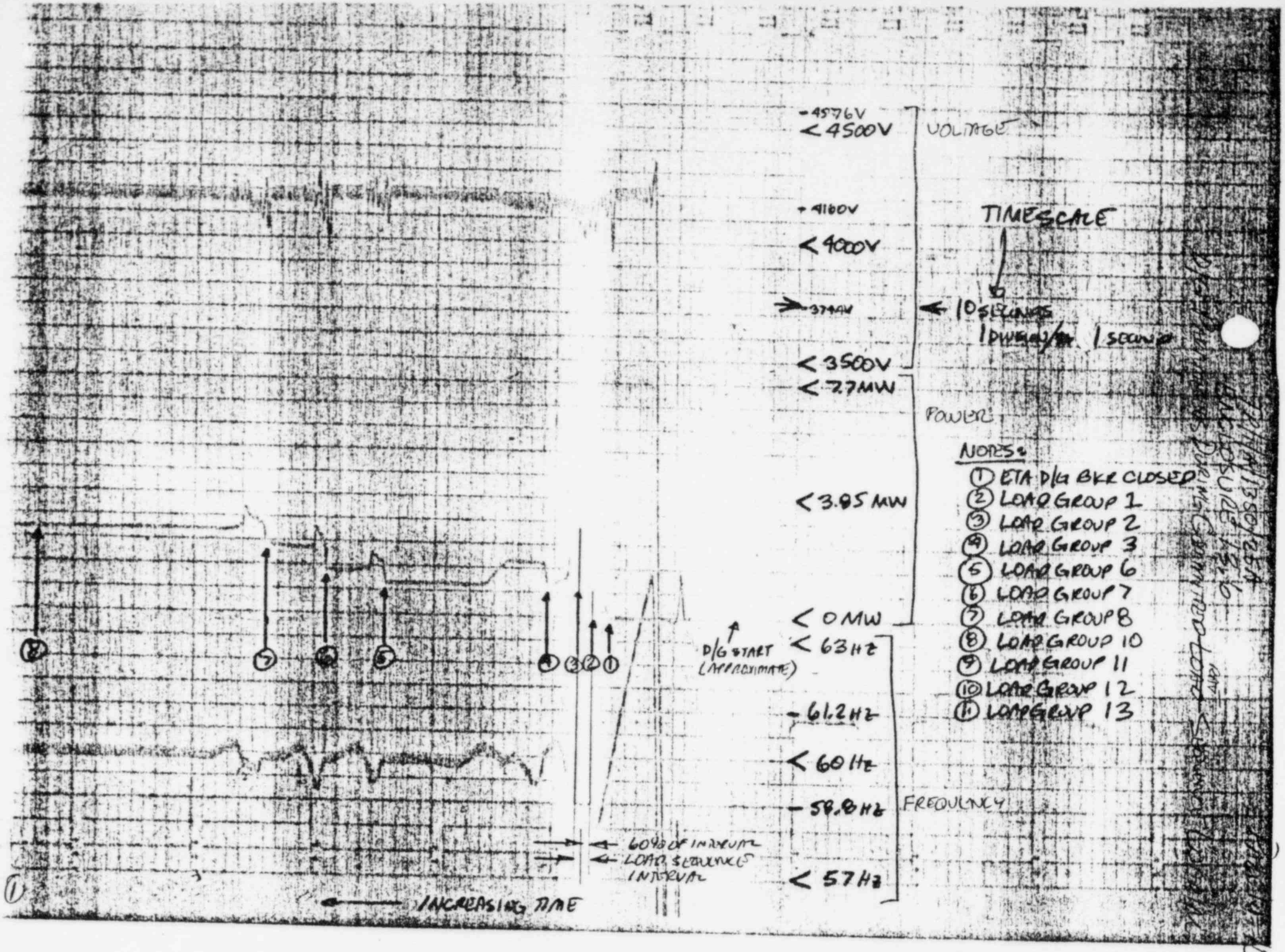
Battery Charger 1CCA - CLOSE FEEDER 1LXI COMPT 5D RAS / 3-28-84

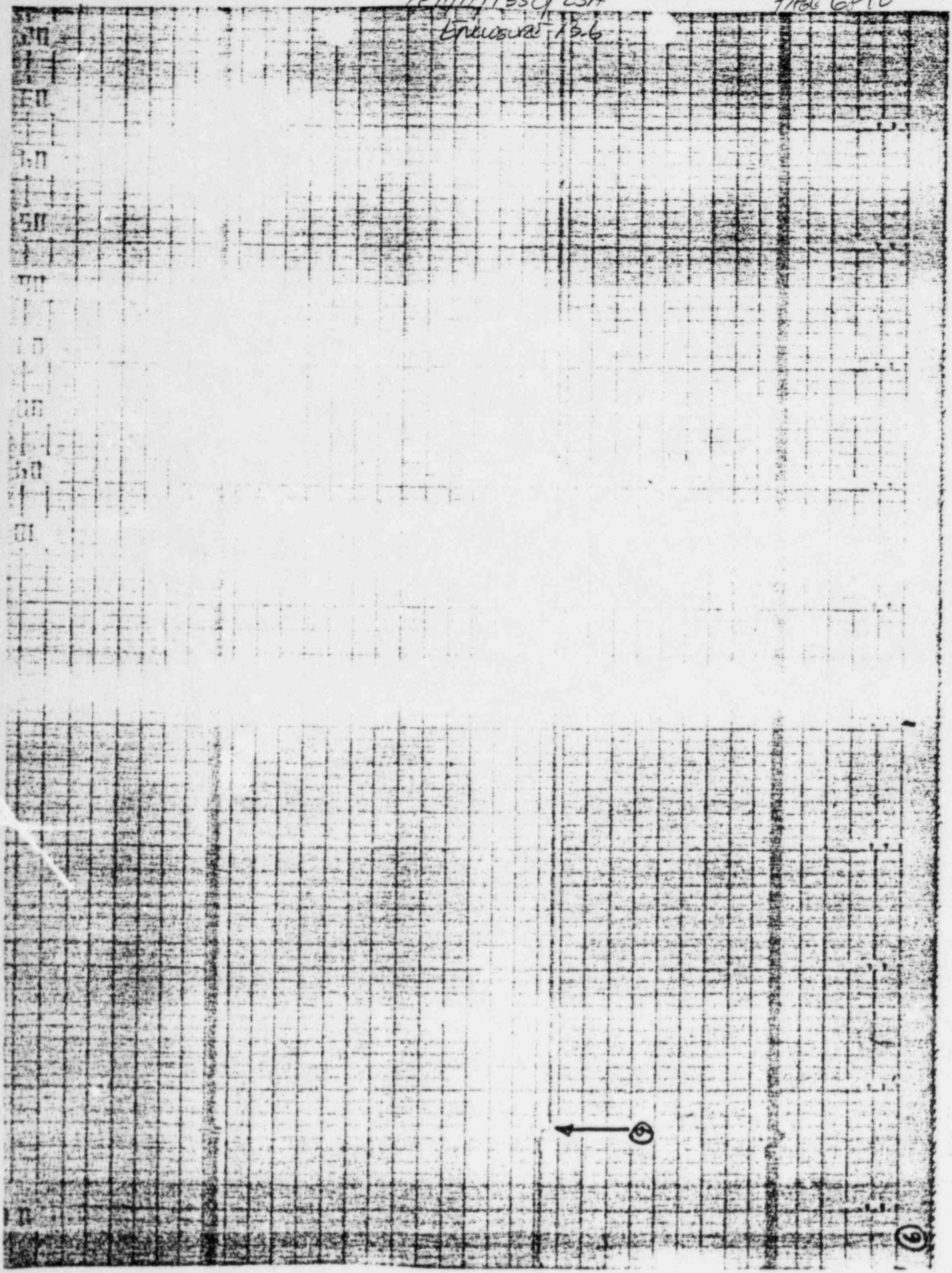
CH#10 RAS ~~Aux Building Filter Room Exhaust Fan A1 - DEPRESS ON~~ TYPO-RAS ~~(VERIFY ACTUATION N12.2)~~ PLACE IN AUTO AND VERIFY ON ~~RAS / 3-31-84~~ RAS

CH#10 RAS Aux Building Unfiltered Exhaust Fan 1A - DEPRESS ON (VERIFY ACTUATION N12.2) RAS / 3-31-84

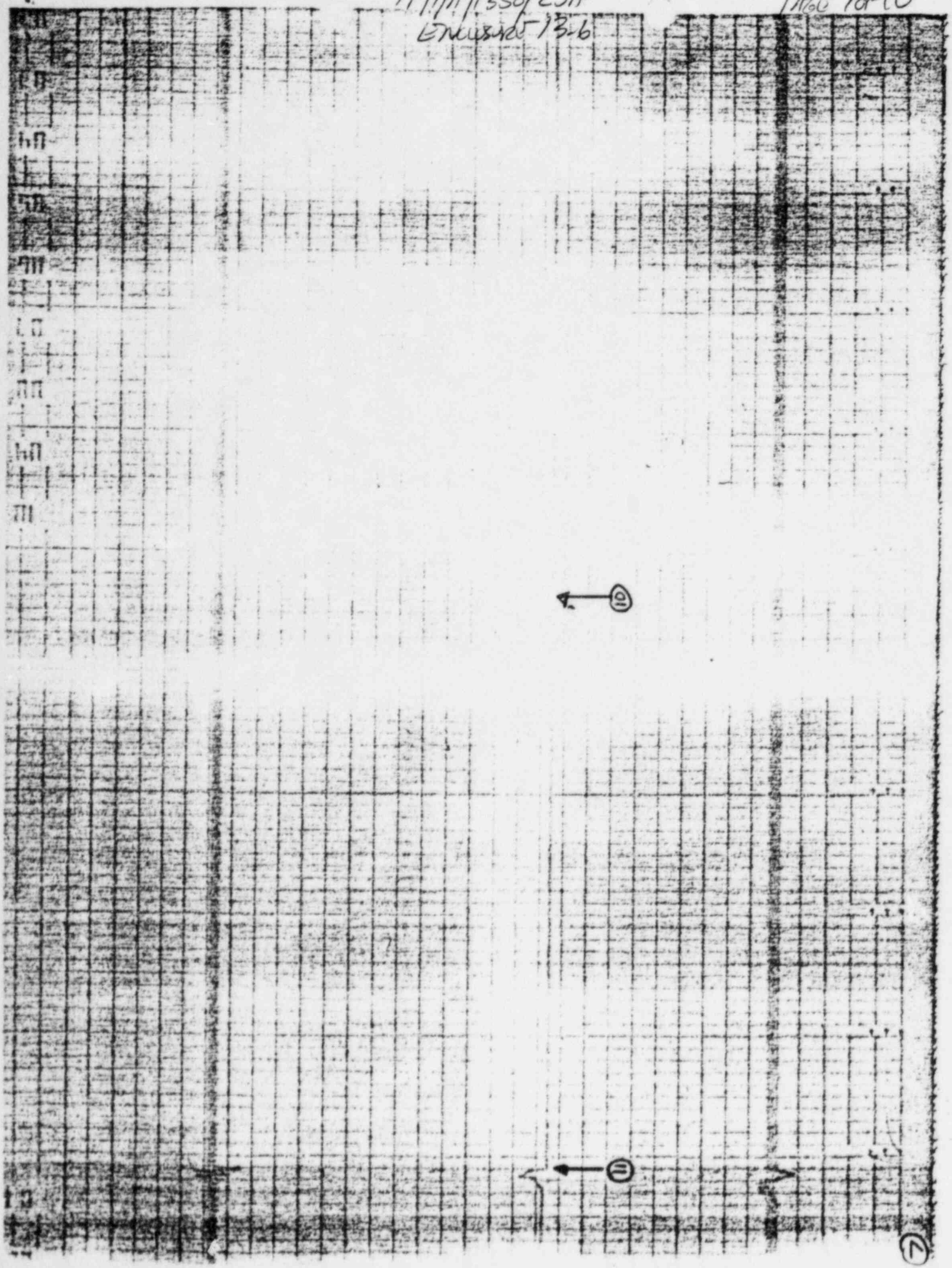
Aux Building Supply Unit 1A - ~~DEPRESS ON~~ PLACE IN AUTO AND VERIFY ON (VERIFY ACTUATION N12.2) RAS / 3-31-84

Fuel Pool Cooling Pump 1A - DEPRESS ON RAS / 3-28-84

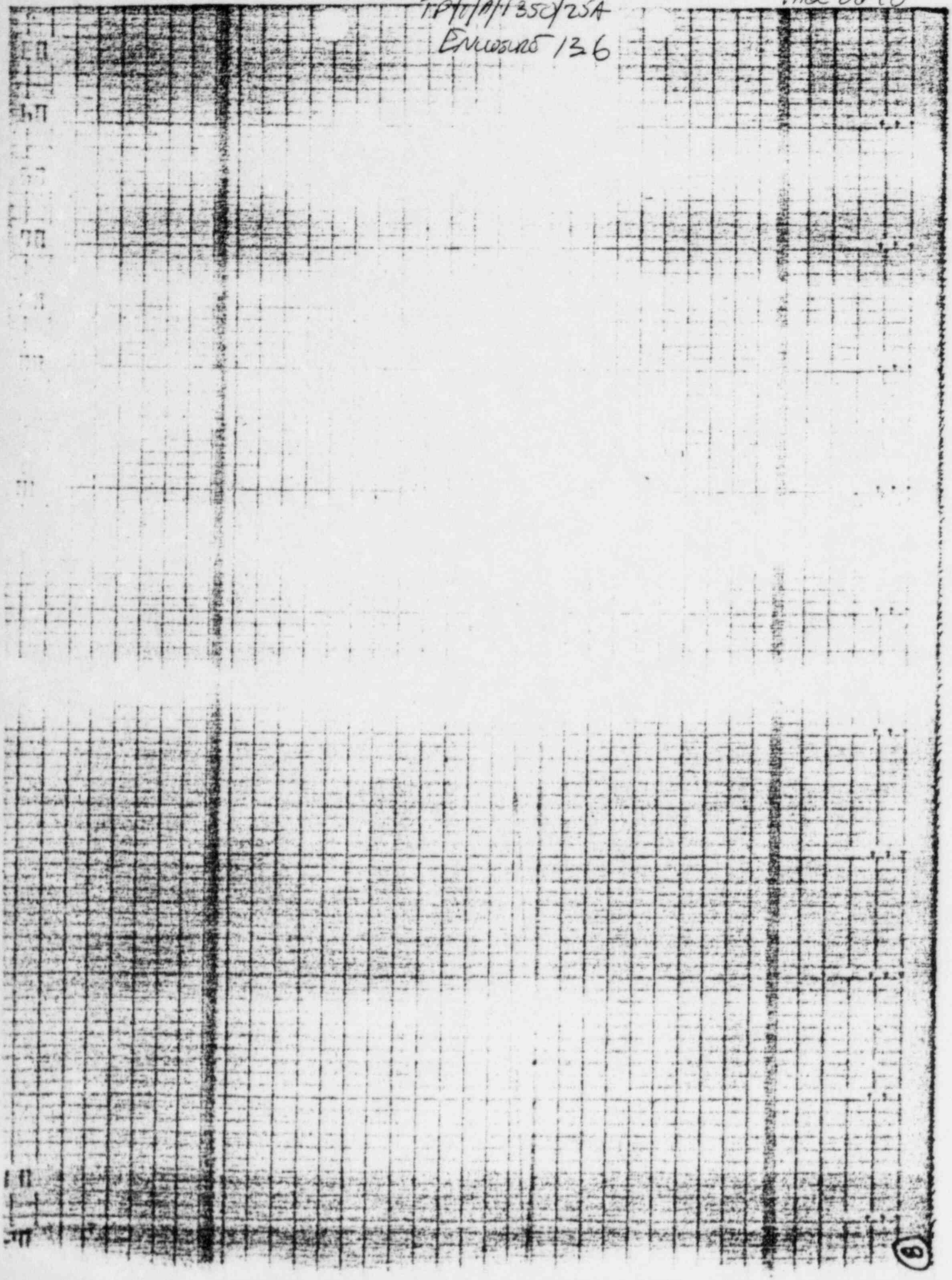

4576V
< 4500V
VOLTAGE
4160V
< 4000V
TIMESCALE
10 SECONDS
1 DIVISION = 1 SECOND
3744V
< 3500V
< 2.7MW
POWER
< 3.85 MW
< 0 MW
NOTES:
1 ETA D/G BKR CLOSED
2 LOAD GROUP 1
3 LOAD GROUP 2
4 LOAD GROUP 3
5 LOAD GROUP 6
6 LOAD GROUP 7
7 LOAD GROUP 8
8 LOAD GROUP 10
9 LOAD GROUP 11
10 LOAD GROUP 12
11 LOAD GROUP 13
D/G START (APPROXIMATE)
< 63 HZ
61.2 HZ
< 60 HZ
58.8 HZ
FREQUENCY
60% OF INTERVAL
LOAD SEQUENCE INTERVAL
< 57 HZ
INCREASING TIME



TP/1/A/1350/25A
Enclosure 13.6



TP/10/1350/25A
Enclosure 136



SECTION 12.1
ER Summary

TP/1/A/1350/25A
ENCLOSURE 13 G

PAGE 9 of 10

ER 594 OCCURRED AT THIS POINT — DOES NOT PRINT OUT ON ER SUMMARY
SINCE DIGITAL POINT IS NOT PLACED IN SERVICE

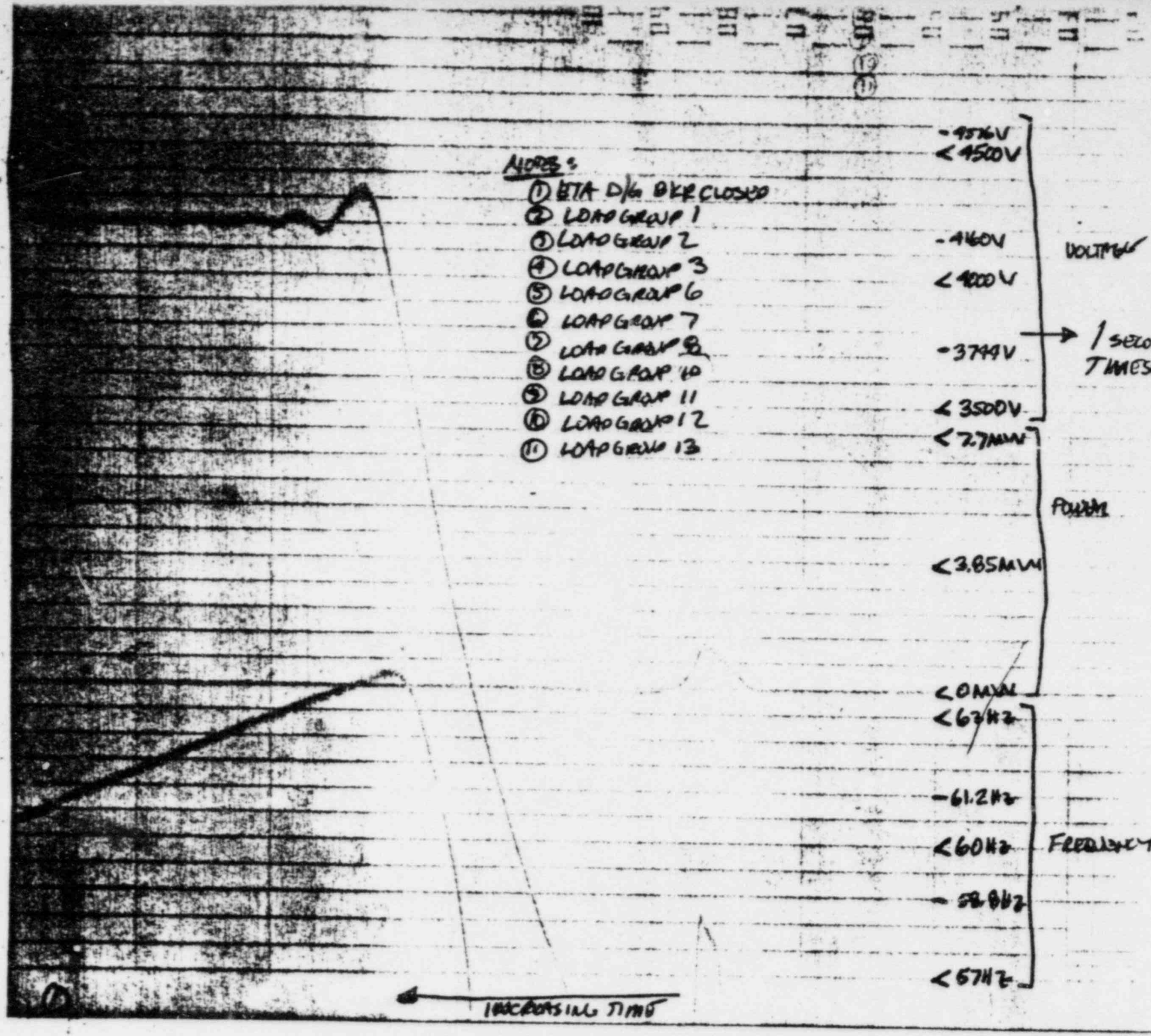
03/26/84 CATALOG 1 PRINTER

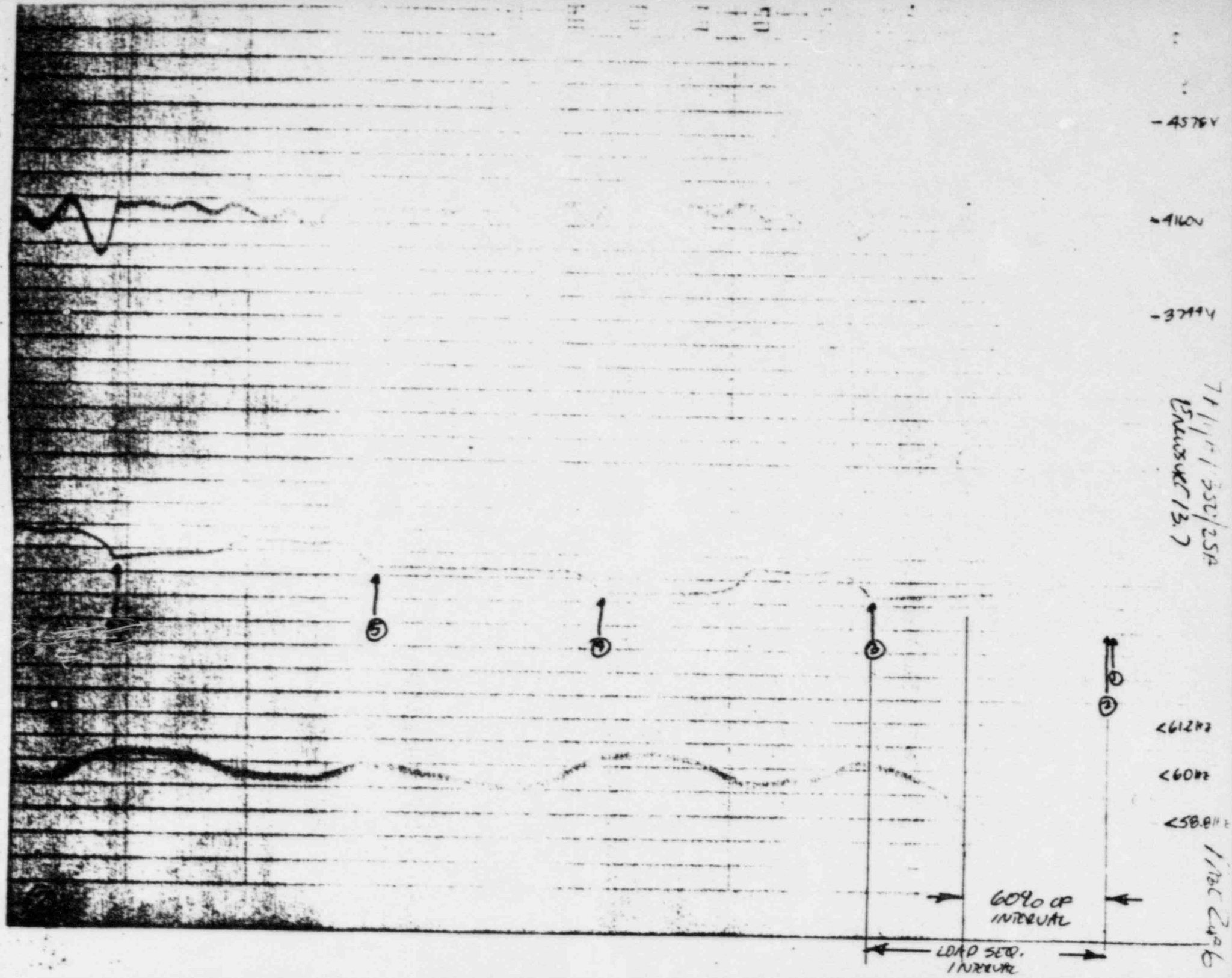
```
03126164361F AC5126 ALARP    EN332 E DEC UNDERVOLT TEST COMPLETE CIA
03126151101F AC5134 ALARP    EN338 ETA LOCAL SPEED
03126151102F AC5125 ALARP    EN331 EMERGENCY LOGIC ACTIVATED (A)
03126151104F C5136 EN RESET EN338 ETA LOCAL SPEED
03126151105F AC5178 ALARP    EN269 ETA D/G EMY CLOSED  (1)
03126151111F C5130 ALWPAL    EN336 ETA UNDERVOLT PHASE T
03126151112F C5131 ALWPAL    EN337 ETA UNDERVOLT PHASE S
03126151123F C5129 ALWPAL    EN335 ETA UNDERVOLT PHASE R
03126151125F AC5172 ALARP    EN279 D/G A COMPUTED TIME LOAD SEQ COMPLE
03126152104F AC5132 ALARP    EN329 LOAD GROUP 1 ENERGIZED (A)  (2)
03126152137F AC5068 ALARP    EN272 ETA ALT INCOMING BRK CLOSED
03126152170F AC5068 ALARP    EN273 ETA ALT FDR TO BUS SHOW BTA CLOSED
03126152194F AC5134 ALARP    EN340 LOAD GROUP 2 ENERGIZED (A)  (3)
03126152195F AC5135 ALARP    EN341 LOAD GROUP 3 ENERGIZED (A)  (4)
03127109101F AC5136 ALARP    EN344 LOAD GROUP 4 ENERGIZED (A)  (5)
03127110101F AC5139 ALARP    EN343 LOAD GROUP 7 ENERGIZED (A)  (6)
03127119101F AC5140 ALARP    EN342 LOAD GROUP 6 ENERGIZED (A)  (7)
03127129101F AC5141 ALARP    EN347 LOAD GROUP 9 ENERGIZED (A)  ← THERE ARE NOT ANY LOADS ON A TRAIN LOAD GROUP NINE FOR BLACKOUT LOADING
03127138101F AC5142 ALARP    EN348 LOAD GROUP 10 ENERGIZED (A)  (8)
03130100111F C4796 ALWPAL    EN000 TIME CHECK
03130110111F C5294 ALWPAL    EN000 TIME CHECK
03130118183F AC5143 ALARP    EN349 LOAD GROUP 11 ENERGIZED (A)  (9)
03131115125F AC5165 ALARP    EN372 LOAD GROUP 12 ENERGIZED (A)  (10)
03130111135F AC5170 ALARP    EN378 LOAD GROUP 13 ENERGIZED (A)  (11)
03100129169F C5278 ALWPAL    EN222 ETA ALMP INCOMING FDR OPEN
03155155164F AC5177 ALARP    EN223 ETA ALT INCOMING FDR OPEN
04101139112F AC5126 ALARP    EN332 DEGENERATE A MODEL ALTERNEL
04101139115F AC5127 ALARP    EN333 ACCELERATED DEGENERE CA (A)
04101139116F C5134 EN RESET EN340 LOAD GROUP 2 ENERGIZED (A)
04101139117F C5135 EN RESET EN343 LOAD GROUP 7 ENERGIZED (A)
04101139118F C5136 EN RESET EN344 LOAD GROUP 4 ENERGIZED (A)
04101139119F C5140 EN RESET EN342 LOAD GROUP 6 ENERGIZED (A)
04101139122F C5128 EN RESET EN336 D DEC UNDERVOLT TEST COMPLETE CIA
04101139123F C5129 EN RESET EN335 LOAD GROUP 12 ENERGIZED (A)
04101139124F C5132 EN RESET EN329 LOAD GROUP 1 ENERGIZED (A)
04101139125F C5134 EN RESET EN340 LOAD GROUP 10 ENERGIZED (A)
04101139126F C5139 EN RESET EN330 EMERGENCY LOGIC INITIATED (A)
04101139127F C5130 EN RESET EN331 EMERGENCY LOGIC ACTIVATED (A)
04101139128F C5131 EN RESET EN341 LOAD GROUP 3 ENERGIZED (A)
04101139129F C5132 EN RESET EN339 DIESEL RESTART COMPLETE (A)
04101139131F C5141 EN RESET EN347 LOAD GROUP 9 ENERGIZED (A)
04101139132F C5143 EN RESET EN349 LOAD GROUP 11 ENERGIZED (A)
04101139133F C5174 EN RESET EN378 LOAD GROUP 13 ENERGIZED (A)
04101139134F C5127 EN RESET EN333 ACCELERATED DEGENERE CA (A)
04101139135F C5126 EN RESET EN332 DEGENERATE A MODEL ALTERNEL
04101174104F C5178 ALWPAL    EN270 TA FDR TO APPR BUS OPEN
04101174105F C5177 ALWPAL    EN223 ETA ALT INCOMING FDR OPEN
04130111111F C4796 ALWPAL    EN000 TIME CHECK
04130110111F C5299 ALWPAL    EN000 TIME CHECK
04130109111F C4796 ALWPAL    EN000 TIME CHECK
04130108111F C5295 ALWPAL    EN000 TIME CHECK
04131101114F AC5179 ALARP    EN225 ETA ALMP INCOMING FDR OPEN
04131101115F C5111 ALWPAL    EN317 ETA FDR TO APPR ETAE OPEN
04131101116F C5110 ALWPAL    EN318 ETA FDR TO APPR ETAE OPEN
```

TP/11/P/1350/25A
Enclosure 1 36

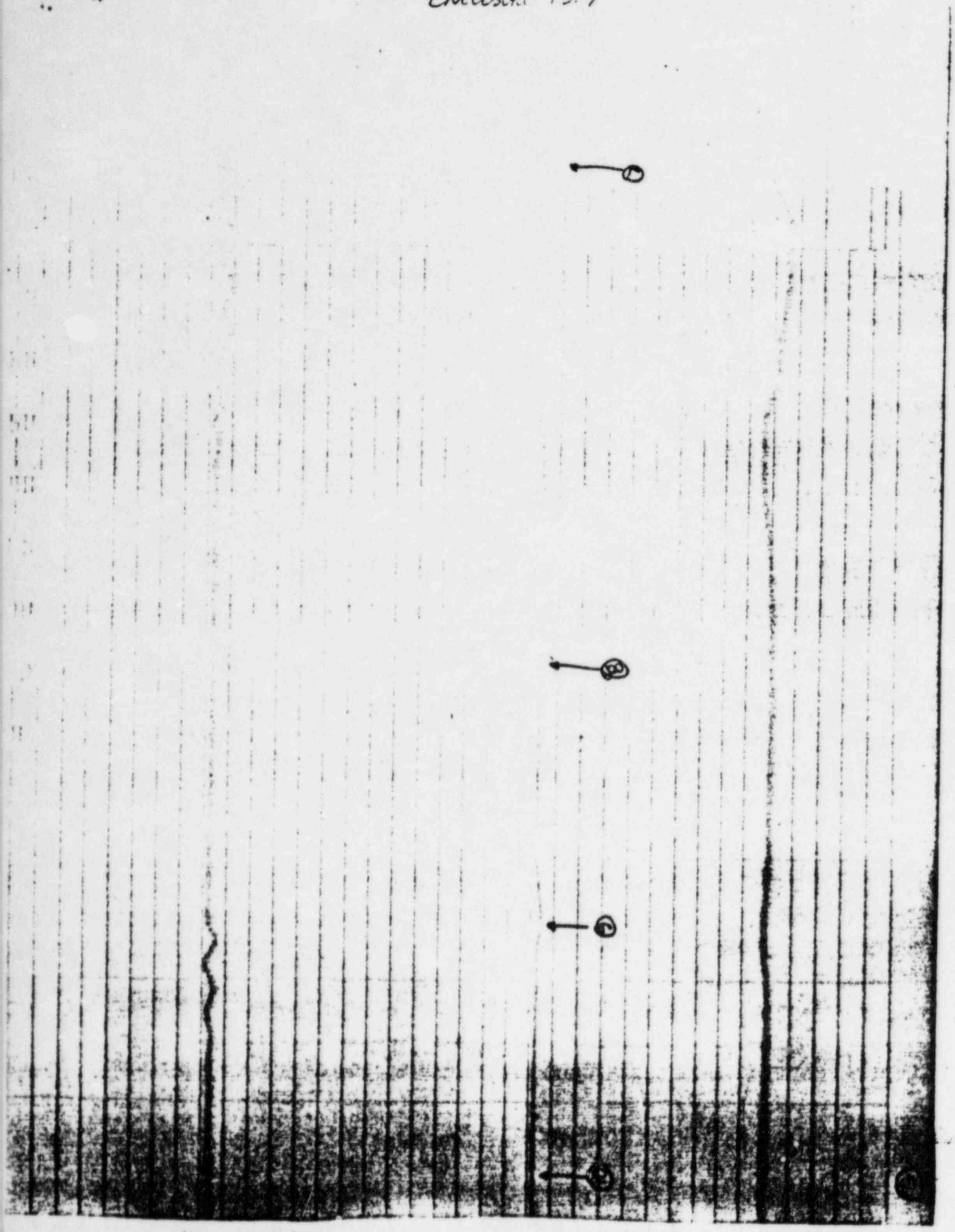
Page 10 of 10

TP/1/A/4150/25A
ENCLOSURE 13.7
D/G PARAMETERS DURING ACCELERATED SEQUENCE LOADING

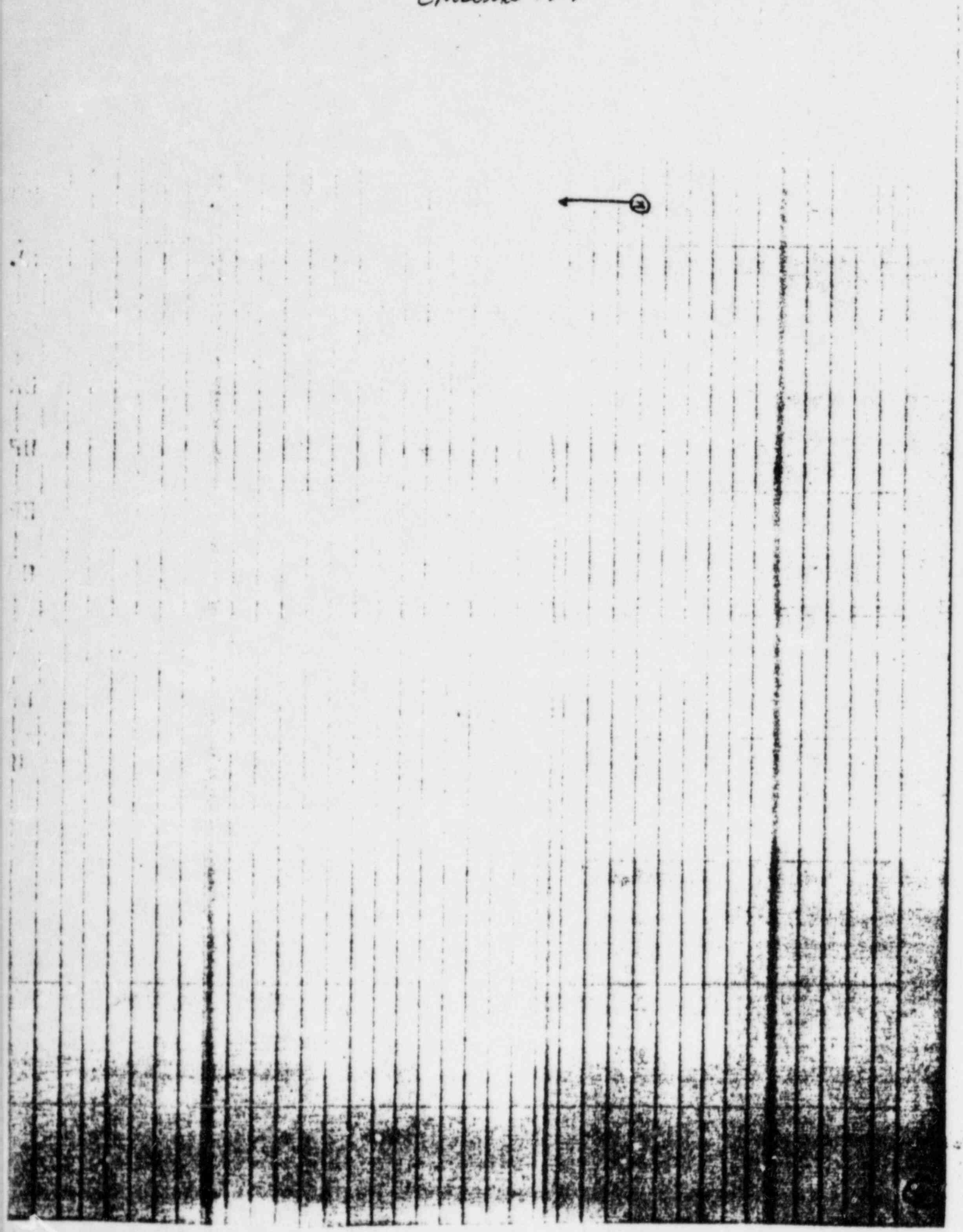



-4576V
-4160V
-3744V
<61.2Hz
<60Hz
<58.8Hz
60% CP INTERVAL
LOAD SEQ. INTERVAL
TITLE: 3SEV/25A ENLARGED 13.7
TRAC CURVE

Enclosure 13.7



TP/1/A/1350/25A
ENCLOSURE 13.7



Section 12.2
ER Summary

<ER584 219847 P37 – DOES NOT PRINT OUT ON ER Summary since DILUTE POINT IS NOT PLACED IN SERVICE

7/1/1/1/3/20/254
Enclosure 137

Page 5 of 6

TP1/1/A/1350/25A
ENCLOSURE 13.7

PAGE 6 OF 6

TP1/M/1350/25A
Enclosure 13.8
D/G Parameters During a 839 kW Load Rejection

Page 1 of 1

→ 1 second ←

4580V	Voltage
4500V	
4000V	
3740V	
3500V	
7.7MW	Power
3.85MW	
0MW	
63Hz	Frequency
61.2Hz	
60Hz	
58.8Hz	
57Hz	

← INCREASING TIME →

TR/1/A/1350/25A
GTN 13529 A3.9
D/G Parameters During Full Load (N 2075kW) Rejection

CATAWBA NUCLEAR STATION
D/G 1A B/O AND LOAD REJECTION
PREOPERATIONAL TEST
TP/1/A/1350/25A
ENCLOSURE 13.10

EVENT RECORDER ACTUATION TIMES & D/G LOAD VALUES

Step	Event Recorder Point	Actuation Time
12.1.26	1ER282	152641 387
	1ER284	152651 202

Time Difference Between 1ER282 & 1ER284 ~~10.815~~ 9.815 RAJ Seconds

Data Recorded By RON JONES

Date 3-28-84

Calculation Performed By RON JONES

Date 3-28-84

Step	Parameter	Value	Initial/Date
12.1.20.2	D/G Load (A0574) (Auto-Connected)	3.13 MW	RAJ / 3-28-84
12.4.2	D/G Load (A0574) (Partial Load Rejection)	0.87 MW	RAJ / 3-30-84
12.5.2	D/G Load (A0574) (Full Load Rejection)	7.09 MW	RAJ / 3-30-84
CH#10 RAJ 12.2.6.2	D/G LOAD (A0574) (AUTO-CONNECTED)	3.32 MW	RAJ / 3-31-84

DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

June 5, 1984

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

My letter of April 18, 1984 provided a response to Catawba SER Confirmatory Item 37, Load Sequencer Accelerated Sequence. Attached for use by the Staff is a copy of TP/1/A/1350/25A - D/F 1A Blackout and Load Rejection Test.

Very truly yours,

H.B. Tucker /-/80

Hal B. Tucker

ROS/php

Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 2900
Atlanta, Georgia 30303

NRC Resident Inspector
Catawba Nuclear Station

Mr. Robert Guild, Esq.
Attorney-at-Law
P. O. Box 12097
Charleston, South Carolina 29412

Palmetto Alliance
2135½ Devine Street
Columbia, South Carolina 29205

Mr. Jesse L. Riley
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

B001
1/1