




APPROVAL
See Title Page
DATE
See Title Page

## E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-1-3980-M
REVISION NO
10
PAGE NO
1 of 10

BT

### SEISMIC INSTRUMENTATION F.T. & C

#### A. PURPOSE

1. To provide instructions for performing an instrument functional test and calibration on the seismic system instrumentation as required by Unit 2 Tech. Specs. Table 3.3.6.2-1 and Table 4.3.6.2-1.
2. This procedure is applicable to instrument listed on Table 1.

#### NOTE

Where required in initial equipment component position verifications, independent verification requires there will be a second person present to accomplish a physical verification and also to initial the steps on the Data Package. For accomplishment of maintenance and surveillance, verification is only required to be completed following accomplishment of the procedure steps for each individual equipment component.

#### B. FREQUENCY

1. Monthly, as required by the manufacturer
2. Once/6 months

#### C. SAFETY

Observe safety procedures outlined in Georgia Power Company, SAFETY, Section "O".

#### NOTE

Before removing instrument from service, insure that one of the following instruments are operable:

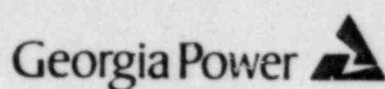
- (1) Free Field Accelerometer
- (2) Peak Response Spectrum Recorder
- (3) Peak Accelerograph

#### D. REFERENCES

1. H-16319 Seismic Measurement Equipment, Control Panel and Instrumentation
2. H-17978 Seismic Measurement Equipment Panel H11-P701 Wiring & External Connection Diagram

APPROVAL
See Title Page
DATE
See Title Page

## E. I. HATCH NUCLEAR PLANT



PROCEDURE NO
HNP-1-3960-M
REVISION NO
10
PAGE NO
2 of 10

3. SX-15198 SMA-3 Acceptance Test
4. SX-15199 Operating Instructions for SMA-3 Strong Motion Accelerograph System
5. SX-15201 Operating Instructions for SMP-1 Magnetic Tape Playback System
6. H-27169 Seismic Measurement Equipment System 2L51
7. S-40872 Seismic Instrumentation Earthquake Response Manual
8. Unit 2 Technical Specifications para. 3.3.6.2.


### E. FUNCTIONAL TEST (Kinematics SMA-3)

1. Inform the Shift Supervisor that the test is to be performed.
2. Insert key and turn switch to OFF.
3. Put on calibration record using the key switch. Turn the key to each position with a positive snap action.
  - a. Turn the key switch (clockwise) to TEST for 60 - 75 seconds.
  - b. Turn the key switch (clockwise) to CALIB and hold for 1-2 seconds.
  - c. Turn the key switch (clockwise) to NAT FREQ and hold for 1-2 seconds.
  - d. Turn the key switch (counter clockwise) to CALIB and hold for 1-2 seconds.
  - e. Turn the key switch (counter clockwise) to TEST and hold for 10 - 15 seconds.
  - f. Turn the key switch (counter clockwise) to OFF. Wait 15 - 20 seconds for the time delay to reset.
  - g. Turn the key switch to OPERATE. Wait 60 - 65 seconds before proceeding.
4. In the 230 KV switchyard remove the upper cover from the Seismic Trigger and start the SMA-3 by gently blowing on the vertical starter mass. Allow the system to record background vibrations until it automatically stops (approximately 10 seconds). Replace the upper cover. Return to the control panel H11-P701. The event indicator should be white.



APPROVAL
See Title Page
DATE
See Title Page

## E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-1-3980-M
REVISION NO
10
PAGE NO
3 of 10

5. Turn key switch to TEST and then back to OFF. This will reset the event indicator to black. Wait 15-20 seconds for the time delay to reset before proceeding.

### NOTE

Independent verification of equipment component position requires there will be two (2) individuals to perform the verifications with both initialling the steps on the Data Package.

6. Replace tape cassette with new cassette. (Independent Verification Required)
7. Repeat step E.3 to put calibration record on tape.
8. Turn the key switch to OPERATE and remove the key.
9. Check to see that the event indicator is black. (Independent Verification Required)
10. Forward status check tape to I & C supervisor for mailing. (Independent Verification Required)
11. Notify the Shift Supervisor that the test is complete.

### F. CALIBRATION AND PERIODIC MAINTENANCE

Refer to Kinemetric SMA-3 QAMP (Quality Assurance Maintenance Program) and to purchase order number PEH-9803 for the calibration and periodic maintenance to be performed by Kinemetrics. The calibration and maintenance will be performed per Kinemetrics procedures.


### G. RESTORATION OF SEISMIC INSTRUMENTATION AND DATA RETRIEVAL

#### 1. RESTORATION OF SEISMIC INSTRUMENTATION

- a. Wait until tape transports have stopped turning, or yellow light on Control Panel has gone off. Event indicator should be white.
- b. Perform Calibration Procedure via key switch.
  - (1) Turn Key switch to OFF, then to TEST. Wait 15 seconds.
  - (2) Turn key switch to CAL. for 2 seconds.
  - (3) Turn key switch to NAT. FREQ. for 2 seconds.

APPROVAL
See Title Page
DATE
See Title Page

## E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-1-3980-M
REVISION NO
10
PAGE NO
4 of 10

- (4) Turn key switch to CAL. for 2 seconds.
  - (5) Turn key switch to TEST for 10 seconds.
  - (6) Turn key switch to OFF, then to OPERATE.
  - (7) Wait until tape transports have stopped turning. Event indicator should be black.
- c. Remove and label cassettes one at a time. Information on cassette should include:
- date of removal
  - time of removal
  - tape transport number (should already be labeled)
  - name of individual performing sequence.

After removing each cassette from its respective tape transport, replace it with another cassette immediately. The new cassette should be labeled with the recorder model and serial number. (Independent Verification Required)

- d. After labeling all cassettes, and each tape transport has a new cassette, repeat Step G.1.b, i.e., run a calibration record on the new tapes. SMA-3 system is now ready to record.
- e. Store all cassettes in one location, away from all objects (such as large magnets, etc.) which could affect the recorded data, free from excess temperatures and humidity.


### 2. RETRIEVAL OF SEISMIC DATA

- a. Complete section G.1
- b. Rewind and play back all three channels from each cassette from the beginning to the end of the data (indicated when time marker ceases) using the SMP-1 Playback System. This is accomplished as follows:
  - (1) Insert first cassette into tape transport. Make sure T-slide is all the way up.
  - (2) Turn POWER SELECT switch to AC RUN.

\*NOTE: If AC power has been disconnected or is not operational, turn POWER SELECT switch to BATTERY RUN.

APPROVAL
See Title Page
DATE
See Title Page

## E. I. HATCH NUCLEAR PLANT

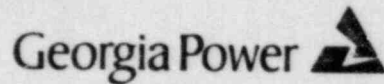
Georgia Power 

PROCEDURE NO
HNP--1-3980-M
REVISION NO
10
PAGE NO
5 of 10

- (3) Turn CHANNEL SELECT switch to 1.
- (4) Turn GAIN FACTOR switch to 1.
- (5) Turn STYLUS switch to ON.
- (6) Turn CHART DRIVE switch to 25 mm/sec and adjust POSITION and STYLUS HEAT controls.
- (7) Turn off CHART DRIVE.
- (8) Turn TRANSPORT switch to ON. Wait until the "time marker" begins to tick, then turn CHART DRIVE to 25 mm/sec.
- (9) After time marker ceases to tick, depress the STYLUS DRIVE - CAL switch upward for 2 seconds.
- (10) Turn CHART DRIVE TO OFF.
- (11) Using T-slide on tape-transport, rewind the tape to the beginning.
- (12) Rip off chart paper. Label each record with exactly the same data written on the cassette from which it was played back plus the channel selected.
- (13) Turn CHANNEL SELECT switch to 2 and repeat Steps (8) through (11).
- (14) Turn CHANNEL SELECT switch to 3 and repeat Steps (8) through (11).
- (15) Turn TRANSPORT switch to OFF and remove tape.

APPROVAL
See Title Page
DATE
See Title Page

# E. I. HATCH NUCLEAR PLANT



PROCEDURE NO
HNP-1-3980-M
REVISION NO
10
PAGE NO
6 of 10

TABLE 1

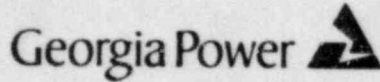
SEISMIC INSTRUMENTATION

L51-N001	Seismic Trigger	Switchyard
L51-N002	Seismic Accelerometer	(Rx. Bldg. El. 90') (Unit I)
L51-N003	Seismic Accelerometer	(Rx. Bldg. El. 188') (Unit I)
L51-N005	Seismic Accelerometer	(Free Field) (Switchyard)
L51-R600A, B	Seismic Recorder	
L51-R602	Power Supply	
L51-R601	Seismic Accelerometer Playback Recorder	
2L51-N021	Seismic Accelerometer	(Unit II Diesel Bldg.)
2L51-N004	Seismic Accelerometer	(Unit II Reactor Bldg. El. 152' Feedwater Line)
2L51-N020	Seismic Accelerometer	(Unit II Reactor Bldg. El. 87')



APPROVAL
See Title Page
DATE
See Title Page

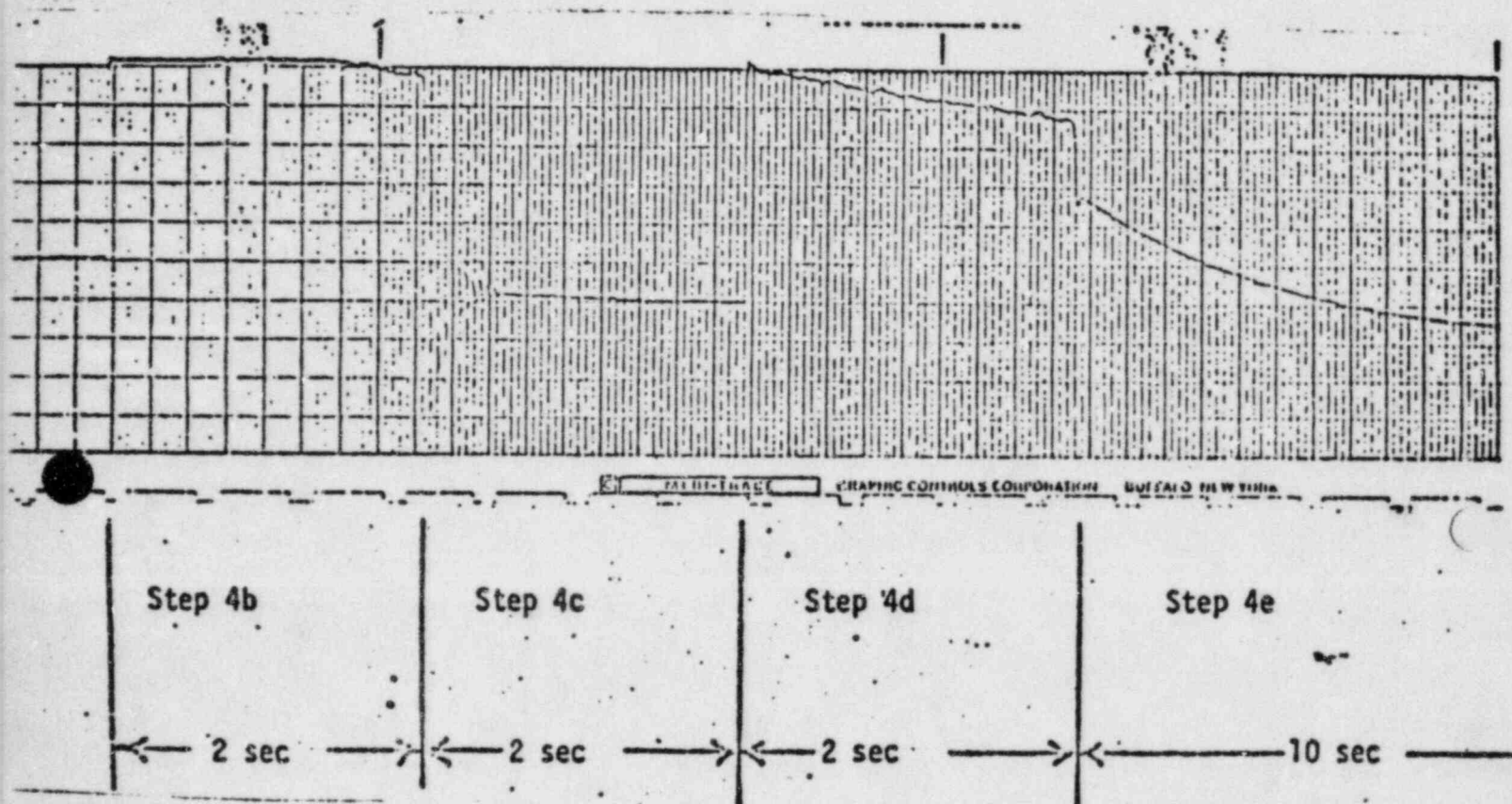
# E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-1-3980-M
REVISION NO	10
PAGE NO	7 of 10

FIGURE 1  
SMA3 STATUS CHECK TAPE EXAMPLE

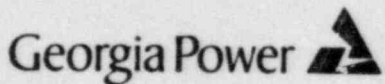
This is an example of steps 4b through 4e showing the approximate time intervals in each key switch position, and the characteristic curves produced by the procedure.





APPROVAL
See Title Page
DATE
See Title Page

# E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-1-3980-M
REVISION NO	10
PAGE NO	8 of 10

PROCEDURE DATA PACKAGE

-

DOCUMENT NO: HNP-1-3980-1

SERIAL NO: R10-

MPL NO: \_\_\_\_\_

RTYPE: G15.19

XREF: \_\_\_\_\_

TOTAL SHEETS: 3

FREQUENCY: Once/6 Months

COMPLETED BY: \_\_\_\_\_

DATE COMPLETED: \_\_\_\_\_

I HAVE REVIEWED THIS DATA PACKAGE FOR COMPLETENESS  
AND AGAINST ACCEPTANCE CRITERIA IN ACCORDANCE WITH HNP-830.

ACCEPTABLE \_\_\_\_\_ UNACCEPTABLE \_\_\_\_\_

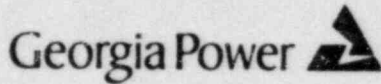
REVIEWED BY: \_\_\_\_\_

DATE REVIEWED: \_\_\_\_\_

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

APPROVAL
See Title Page
DATE
See Title Page

# E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-1-3980-M
REVISION NO	10
PAGE NO	9 of 10

## DATA PACKAGE 1 KINEMATICS SMA-3

### REASON FOR TEST

( ) SURV., ( ) MR NO. \_\_\_\_\_, ( ) OTHER \_\_\_\_\_

### TEST PERFORMANCE

STEP NO.	CONDITION	COMPLETED BY
E.2	Key Switch to OFF	
E.3.a	Key Switch to TEST (CW)	
E.3.b	Key Switch to CALIB (CW)	
E.3.c	Key Switch to NAT FREQ (CW)	
E.3.d	Key Switch to CALIB (CCW)	
E.3.e	Key Switch to TEST (CCW)	
E.3.f	Key Switch to OFF (CCW)	
E.3.g	Key Switch to OPERATE	
E.4	Event Indicator White	

### SYSTEM RESTORATION INDEPENDENT VERIFICATION REQUIRED

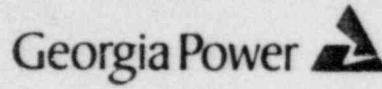
#### NOTE

In equipment component position verifications, initialling a step on a procedure Data Package shall attest to the accomplishment of the procedure step. The step shall be initialed following completion of each separate step before proceeding to another step.

CONDITION	COMPLETED BY	VERIFIED BY
Check tape cassettes removed.		
Event Indicator Black.		
Tape cassette replaced.		
Event Indicator Black.		
Status check tape forwarded to I & C Supervisor.		
Cover replaced on SMA-3.		
Key switch to operate.		

APPROVAL
See Title Page
DATE
See Title Page

# E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-1-3980-M
REVISION NO	10
PAGE NO	10 of 10

## DATA PACKAGE 1 (CONT.)

### TEST RESULTS

Acceptable  Non-Acceptable, Shift Supervisor Notified\_\_\_\_\_

Reason for Non-Acceptance/Comments\_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

COMPLETED BY	DATE