

PROCEDURE

Lab
RESPONSIBLE SECTION

NON-SAFETY RELATED ()

[illegible]

We
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4530

Revision No. 4

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
Tim Kirkham	1-26-83	<i>W.H. Ryan</i>	2-6-83

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
 () Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
 (See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

page 1 Title: delete Shift Supervisor and replace with
 Operations Supervisor.

page 1 C.3: delete Shift Foreman and replace with Shift
 Supervisor, add Count Room in front of operator

page 1 C.4: delete Shift Foreman and replace with Shift
 Supervisor.

page 1 C.5: delete Shift Supervisor and replace with Operations
 Supervisor, capitalize Emergency Call List.

PRB RECOMMENDS APPROVAL: (X) Yes () No

Steve Liss
 PRB Secretary

88-38

PRB Number

2-22-83
 Date

HNP-3

MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.

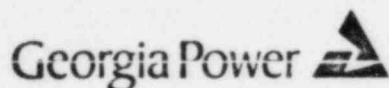
1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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E. I. HATCH NUCLEAR PLANT



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HNP-4530
REVISION NO
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BC

ALERT - OPERATIONS SUPERVISOR

A. CONDITION

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (P.A.G.) exposure levels.

B. REFERENCE

HNP-4520.

C. ACTION

1. Proceed to control room.
2. Assume the duties of the Emergency Director until relieved, see HNP-4540 for actions.
3.
 - a. Evaluate actions of Shift Supervisor and Count Room Operator to bring emergency under control.
 - b. Assure correct emergency classification has been declared as per HNP-4520.
4. Consult with Shift Supervisor and STA to determine if a more severe emergency class should be declared. Refer to criteria in HNP-4620, 4720 and 4853.
5. The Operations Supervisor is responsible for notification of Plant Management and NRC as per Emergency Call List and other offsite agencies in accordance with notification procedures HNP-4861. The actual notification process may be delegated to other, specifically trained, shift personnel.
6. Augment shift resources as needed to assess and respond to the event.
7. Make a safety assessment to determine if personnel not involved in the emergency recovery effort should be evacuated. If possible, consult with Plant Management concerning this evacuation.

Alert - Emergency Director
PROCEDURE TITLE

Lab
RESPONSIBLE SECTION

NON-SAFETY RELATED ()

MANUAL SET

We
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4540

Revision No. 4

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature: ..	Date:
<i>Tim Kirkham</i>	<i>1-26-83</i>	<i>W.H. Rogers</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
() Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
(See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

Page 2 #13 : add EOF

PRB RECOMMENDS APPROVAL: (X) Yes () No

83-38

PRB Number

Steve Lipp
PRB Secretary

2-22-83
Date

HNP-3

MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.

1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

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APPROVAL
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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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Bc

ALERT - EMERGENCY DIRECTOR

A. CONDITION

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (PAG) exposure levels.

B. REFERENCE

HNP-4420

HNP-4520

HNP-4620

HNP-4720

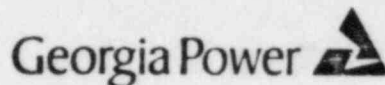
HNP-4853

C. ACTION

1. The Plant Manager or his designee will assume the position of Emergency Director as soon as he can establish himself in an activity center (EOF or TSC). The Emergency Director directs the overall management of the emergency response and is directly responsible for recommending protective actions in accordance with HNP-4854 to SREC/GEMA. The Emergency Director may choose to station himself in the EOF or the TSC. He assigns personnel as necessary to perform the duties below.
2. Assure that the TSC, OSC and EOF are safe areas through the use of portable survey instruments.
3. Establish communications with the Control Room and the TSC or EOF, as appropriate, and obtain information on the diagnosis and prognosis of the accident condition, the estimates of radioactive material releases, and the prevailing meteorological conditions. This communication channel is to remain in use for this information as long as necessary.
4. Confirm that all notifications as per Emergency Call List have been completed.

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5. Maintain communication with State Radiation Emergency Coordinator and/or GEMA and relate the accident diagnosis and prognosis information necessary for these authorities to implement their emergency plans.
6. Assure that State and local authorities and the NRC are periodically provided with appropriate meteorological and release data, and dose estimates as per HNP-4861. This task should be performed in the EOF normally; the ENN may be used to inform State and local authorities and the HPN may be used to inform the NRC.
7. Assure that plant status updates are provided to NRC and State authorities at least every 15 minutes. The NRC may be informed by the use of the ENS and the State may be informed by the use of a dedicated telephone circuit to the Georgia Emergency Management Agency (GEMA).
8. Coordinate rescue effort when required.
9. Assure that all personnel reporting to the EOF, TSC and OSC are surveyed for contamination and possible high radiation exposure.
10. Contact company management for outside assistance.
11. Supervise collection of emergency data in the Emergency Operations Facility or TSC log as appropriate.
12. Organize personnel and standby to provide further assistance.
13. When appropriate, in consultation with Control Room, TSC, EOF, and Plant Management, escalate to a more severe class or close out or reduce emergency class by verbal summary to offsite authorities followed by written summary within 8 hours of closeout or class reduction. Refer to the procedures listed in section B for emergency class criteria.
14. Establish security.
15. Develop recovery and mitigation plan.

PROCEDURE

HNP-4420

PROCEDURE NUMBER

Lab
RESPONSIBLE SECTION

SAFETY RELATED (X)

NON ~~SECRET~~ RELATED (

[illegible]

HNP-9

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4420

Revision No. 4

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
Tim Kirkham	1-26-83	W.H. Rogers	2-6-83

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

Page 1. C. Note : delete Shift Foreman and replace with
 Shift Supervisor, delete Shift Supervisor and
 replace with Operations Supervisor.

Page 4. 8, 9, 10 : delete Shift Supervisor's and replace with
 Operations Supervisor's

Page 5. E : delete Shift Supervisor's and replace with
 Operations Supervisor's.

Page 6. 12 : delete Shift Supervisor's and replace with
 Operations Supervisor's

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve J. [Signature]
 PRB Secretary

85-38

PRB Number

2-22-83

Date

HNP-3

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.

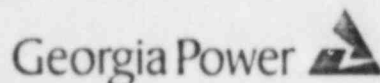
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E. I. HATCH NUCLEAR PLANT



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NOTIFICATION OF UNUSUAL EVENT

A. CLASS DESCRIPTION

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant, such as those noted in Table 1. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

B. PURPOSE

Purpose of offsite notification is to (1) assure that the first step in any response later found to be necessary has been carried out, (2) bring the operating staff to a state of readiness, and (3) provide systematic handling of unusual events information and decision making.

C. PLANT ACTIONS

NOTE

The Shift Supervisor or Operations Supervisor (or higher ranking licensed or certified person present) in consultation with the STA, if feasible, recognizes and declares that the plant is in a state of emergency of Unusual Event Class. The Operations Supervisor assumes the role of Emergency Director until relieved by the Plant Manager or his designee.


1. Inform State and/or local offsite authorities of the nature of the unusual condition within 15 minutes following recognition.
2. Augment on-shift resources as needed.
3. Assess and respond.
4. Escalate to a more severe class, if appropriate.

OR

5. Close out with verbal summary to offsite authorities; followed by written summary within 24 hours.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

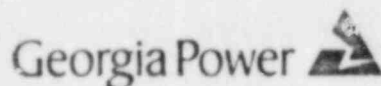
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D. STATE AND/OR LOCAL OFFSITE AUTHORITY ACTIONS

1. Provide fire or security assistance, if requested.
2. Escalate to a more severe class, if appropriate.
3. Stand by until verbal closeout.

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E. I. HATCH NUCLEAR PLANT




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TABLE 1
NOTIFICATION OF UNUSUAL EVENT

<u>INITIATING CONDITION</u>	<u>EQUIPMENT STATUS</u>	<u>PARAMETER VALUE</u>
1. ECCS initiated and discharged to vessel	Auto initiation of: Core spray, or RHR (LPCI mode)	-146.5 inches or 2 psig drywell pressure -146.5 inches or 2 psig drywell pressure
2. Radiological effluent technical specification limits exceeded	Main Stack and Reactor Bldg Vent monitors Hi-Hi alarm plus monitor readings Liquid Radwaste Effluent Hi alarm plus monitor readings	Exceeding ETS 2.1.3a Exceeding ETS 2.1.1a
3. Fuel damage indication		
a. High off gas at pretreat monitor	Pretreat Monitor Hi Hi alarm plus monitor readings	500,000 μ Ci/sec corresponding to 16 isotopes de- cayed to 30 minutes; or an in- crease of 100,000 μ Ci/sec within a 30 minute period.
b. High coolant activity sample	Lab sample signifi- cantly greater than limit for normal opera- ting I-131 equivalent	> 100 μ Ci/gm of I-131 equivalent
4. Abnormal reactor pressure	Reactor Vessel High Pressure	\geq 1200 psig

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

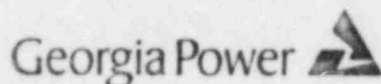
PROCEDURE NO HNP-4420
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TABLE 1 (CONT.)
NOTIFICATION OF UNUSUAL EVENT

<u>INITIATING CONDITION</u>	<u>EQUIPMENT STATUS</u>	<u>PARAMETER VALUE</u>
5. Failure of a main steam line relief valve to close following a reduction of applicable pressure	Failure of valve to close	Torus and/or DW pressure increase Torus Temp > 110°F Torus Level High > 153 in. Safety Relief Vlv Tail Pipe Temp. High > 230°F
6. Loss of offsite power or loss of onsite AC power capability	500 and 230 KV system failure or Loss of all emergency diesel generators	Zero voltage on all incoming outside lines zero voltage indicated on all 4.16 kV buses
7. Loss of containment integrity requiring shutdown by technical specifications	Loss of Primary or Secondary Containment Integrity	See Table 1a
8. Fire within the plant lasting more than 10 minutes	Fire alarm and observation	Operations Supervisor's judgement
9. Security threat or attempted entry or attempted sabotage	Observation or valid initiation of security alarms	Operations Supervisor's judgement based on advise of Security Shift Supervisor
10. Natural phenomenon being experienced or projected beyond usual levels.	Observation or notification	Operations Supervisor's judgement

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TABLE 1 (CONT.)
NOTIFICATION OF UNUSUAL EVENT

<u>INITIATING CONDITION</u>	<u>EQUIPMENT STATUS</u>	<u>PARAMETER VALUE</u>
a. Any earthquake felt inplant or detected on plant seismic instrumentation	Observation or - "Seismic Instrumentation Triggered" Alarm on Unit I Control panel. This starts the Time/Historic Recorders for Units I	Alarm setpoint is .005 G
b. Any tornado onsite causing significant damage affecting plant operations	Observation	
c. Any hurricane onsite causing significant damage affecting plant operations	Observation	>75 mph
d. 50 year flood causing significant damage affecting plant operations	Observation	≥88.6 ft. MSL
e. Low river water	Unit 1: Intake Screen or Low Water alarm plus observation of level indicators Unit 2: Plant Service Water Intake Structure Low Level alarm plus observation of level indicators	≤62 1/4 ft. MSL
11. Other hazards being experienced or projected		Operations Supervisor's judgement
a. Aircraft crash on-site or unusual aircraft activity over facility	Observation	
b. Onsite explosion	Observation	

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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TABLE 1 (CONT.)
NOTIFICATION OF UNUSUAL EVENT

<u>INITIATING CONDITION</u>	<u>EQUIPMENT STATUS</u>	<u>PARAMETER VALUE</u>
c. Significant onsite toxic gas release	Chlorine alarm in Chlorine Bldg. Rupture of chlorine cylinder or chlorine system piping or observation	1
Significant onsite flammable gas release	Observation	1
d. Turbine rotating component failure causing rapid plant shutdown	Turbine trip, turbine internal damage	
12. Other plant conditions exist which warrant increased awareness on the part of the plant operating staff or State and/or local off-site authorities	Exceeding any safety limit as required in technical specifications	Operations Supervisor's judgement
13. Transportation of contaminated injured individual from site to offsite hospital	High contamination to injured individual	>10,000 dpm/100cm ²

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TABLE 1a
HNP-EP

PARAMETER VALUE FOR LOSS OF CONTAINMENT INTEGRITY REQUIRING SHUTDOWN BY TECHNICAL SPECIFICATIONS

Unable to meet one of the following requirements within time limit set forth by technical specifications:

1. All non-automatic containment isolation valves on lines connected to the reactor coolant system or containment which are not required to be open during accident conditions are closed. These valves may be opened to perform operational activities.
2. At least one door in the personnel airlock is closed and sealed.
3. All automatic containment isolation valves are operable or deactivated in the isolated position.
4. All blind flange and man ways are closed.
5. At least one door in each access opening is closed.
6. The standby gas treatment system is operable.
7. All automatic ventilation system isolation valves are operable and are secured in the isolated position.

PROCEDURE

NON-SAFETY RELATED ()

HNP-3

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4422

Revision No. 2

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
Tim Kirkham	1-26-83	W.H. Rye	2-6-83

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
 () Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
 (See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

Page 1 C.3 : delete Shift Foreman and replace with
 Shift Supervisor

Page 1 C.5 : delete Shift Foreman and replace with
 Shift Supervisor

Page 1 C.6 : delete Shift Foreman and replace with
 Shift Supervisor

PRB RECOMMENDS APPROVAL: (X) Yes () No

Steve Lipp
 PRB Secretary

83 - 38

PRB Number

2-22-83
 Date

HNP-3

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

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APPROVAL
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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-4422
REVISION NO
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NOTIFICATION OF UNUSUAL EVENT - CONTROL ROOM OPERATORS

A. CONDITIONS

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant, such as those noted in HNP-4420, Table 1. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

B. REFERENCE

HNP-4420

C. ACTION

1. Take appropriate action to place the plant in a safe condition in accordance with emergency operating procedures, Tech. Specs., and annunciator response procedures.
2. Make the following announcement over the PA:

ATTENTION, ATTENTION: A NOTIFICATION OF UNUSUAL EVENT EXISTS. (If immediate safety of personnel involved, state the incident.) INITIATE NOTIFICATION OF UNUSUAL EVENT PROCEDURES.

NOTE

There is no Gai-tronics tone for Notification of Unusual Event.

Repeat announcement.

3. Check the control room instrumentation to determine status of plant as to whether or not a more severe emergency class should be declared. Notify Shift Supervisor of findings.
4. Notify Security.
5. Evaluate radiological releases using HNP-4853 and inform Shift Supervisor of results.
6. If Shift Supervisor has not reported in to the control room, initiate his actions as per HNP-4423.
7. Announcement of the "Notification of an Unusual Event" status should be repeated periodically (approximately every 30 minutes) throughout the duration of the event.

PROCEDURE

NON-SAFETY RELATED ()

MANUAL SET

We
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4423

Revision No. 3

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature: ..	Date:
<i>Tim Kirkham</i>	<i>1-26-83</i>	<i>W.H. Rogers</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST _____

*page 1 title: delete Shift Foreman and replace with
Shift Supervisor*

*Page 1 C.5: delete Shift Supervisor and replace with
Operations Supervisor*

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve Ligo
PRB Secretary

83 - 38

PRB Number

2-22-83

Date

HNP-3

SAFETY EVALUATION

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APPROVAL
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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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HNP-4423
REVISION NO
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8c

NOTIFICATION OF UNUSUAL EVENT-SHIFT SUPERVISOR

1

A. CONDITIONS

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant, such as those noted in HNP-4420, Table 1. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

B. REFERENCE

HNP-4420

C. ACTION

1. Proceed to control room immediately.
2. Classify and declare emergency using HNP-4420, ensure that correct operator action has been taken to bring emergency under control.
3. Evaluate conditions and findings of the control room operator to see if a more severe emergency class should be declared. Refer to criteria in HNP-4520, 4620, 4720 & 4853 procedures.
4. Activate rescue team if necessary by notifying Health Physics.
5. Assume the duties and responsibilities of the Operations Supervisor if he does not report to the Control Room, or is incapacitated, as per HNP-4430.
6. Direct onsite actions to bring emergency under control.

PROCEDURE

RESPONSIBLE SECTION

NON-~~RE~~LATED ()

HNP-9

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PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4430

Revision No. 4

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Tim Kirkham</i>	<i>1-26-83</i>	<i>W.H. Rogers</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
() Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
(See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

*Page 1 title : delete Shift Supervisor and replace with
Operations Supervisor*

*Page 1 C.2.a : delete Shift Foreman and replace with Shift
Supervisor*

*Page 1 C.3 : delete Shift Foreman and replace with Shift
Supervisor*

*Page 1 C.4 : delete Shift Supervisor and replace with
Operations Supervisor, capitalize Emergency Call
List*

PRB RECOMMENDS APPROVAL: (✓) Yes () No

Steve Lipp
PRB Secretary

83-38

PRB Number

2-22-83
Date

HNP-3

SAFETY EVALUATION

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1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

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APPROVAL
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E. I. HATCH NUCLEAR PLANT

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BT

NOTIFICATION OF UNUSUAL EVENT-OPERATIONS SUPERVISOR

A. CONDITION

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant, such as those noted in HNP-4420, Table 1. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

B. REFERENCE

HNP-4420.

C. ACTION

1. Proceed to control room immediately.
2. Assume the duties as Emergency Director and take responsibility for overall management of emergency response, including declaration and notification of the emergency, until relieved by Plant Manager or his designee.
 - a. Evaluate actions of Shift Supervisor and operators to bring emergency under control.
 - b. Assure correct emergency classification has been declared as per HNP-4420.
3. After consultation with Shift Supervisor and Shift Technical Advisor determine if a more severe emergency class should be declared. Refer to criteria in HNP-4520, 4620, 4720 and 4853.
4. The Operations Supervisor is responsible for notification of Plant Management and NRC as per Emergency Call List and other offsite agencies in accordance with notification procedure HNP-4861. The actual notification process may be delegated to other, specifically trained, shift personnel.
5. Augment on shift resources as needed to assess and respond to the event.
6. Close out after the emergency with verbal summary to offsite authorities; followed by written summary within 24 hours.

PROCEDURE

PROCEDURE NUMBER

LAB
RESPONSIBLE SECTION

NON-SAFETY RELATED ()

HNP-9

Wes
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4523

Revision No. 3

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Rick Titolo</i>	<i>1/26/83</i>	<i>W.A. Roger</i>	<i>2/6/83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

*Page 1, Title: delete Shift Foreman & replace
 with Shift Supervisor*

*Page 1, C.6: add Emergency Operations Facility
 C.8: delete Shift Supervisor & replace with
 Operations Supervisor.*

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve Lion
 PRB Secretary

83 - 38

PRB Number

2-22-83
 Date

HNP-3

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

APPROVAL
See Title Page
DATE
See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-4523
REVISION NO
4
PAGE NO
1 of 1

ALERT - SHIFT SUPERVISOR

A. CONDITIONS

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (P.A.G.) exposure levels.

B. REFERENCE

HNP-4520

C. ACTION

1. Proceed to control room immediately.
2. Classify and declare the emergency using HNP-4520, and ensure that correct operator action has been taken to bring emergency under control.
3. Evaluate conditions and findings of the control room operator to see if a Site Area or General Emergency should be declared, based on performance of HNP-4853 and on criteria in HNP-4620 and 4720.
4. Activate Internal Survey Team by contacting Operations Support Center Manager when staffed. Direct Internal Survey Teams to areas to be surveyed as appropriate.
5. Activate Rescue Team as necessary by contacting Operations Support Center Manager when staffed.
6. Establish communications with the Emergency Operations Facility, Security Force, Technical Support Center, and Plant Management as soon as possible and discuss declaring a Site Area or General Emergency and/or the need for outside assistance.
7. Direct onsite actions to bring emergency under control.
8. Assume the duties and responsibilities of the Operations Supervisor if he does not report to the control room, or is incapacitated, as per HNP-4530.

PROCEDURE

RESPONSIBLE SECTION

NOT NEARLY RELATED ()

HNP-9

7112
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4524

Revision No. 2

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Tim Kirkham</i>	<i>1-26-83</i>	<i>W.H. Rogers</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
() Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
(See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

*Page 1 C.1 : delete "and wipes" and add wipes
to end of list.*

Page 1 C.3a : delete "immediately".

*Page 2 -9 : delete "Shift Foreman" and replace with
Shift Supervisor.*

*Page 2 12 : delete Shift Foreman and replace with
Shift Supervisor.*

PRB RECOMMENDS APPROVAL: (X) Yes () No

Steve Linn
PRB Secretary

83-88

PRB Number

2-22-83
Date

HNP-3

EC
MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

APPROVAL
See Title Page
DATE
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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-4524
REVISION NO
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PAGE NO
1 of 2

EC

ALERT - INTERNAL SURVEY TEAM

A. CONDITION

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protection Action Guideline (PAG) exposure levels.

B. REFERENCES

HNP-4520

C. ACTION

NOTE

This action is to be taken by the Health Physics Supervisor or designated alternate, whenever possible, or by other trained personnel.

1. Obtain the following equipment from the OSC Emergency Kit or from the HP office.

- High Range Survey Meter
- High Range Dosimeter
- GM Survey Instrument
- MSA Air Pack SCBA
- Protective Clothing
- Air Sampler
- Radio
- Wipes

2. Turn instruments on and allow them to warm up.
3. Don the protective clothing and the SCBA. Proceed toward area where the emergency exists making survey as you go.

NOTE

At all times, follow the guidelines and limits of HNP-4866.

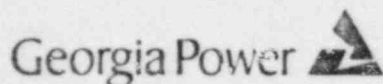
- a. If any of the following readings are observed, retreat and notify the Control Room.

- Beta, Gamma - any reading above 5 R/hr
- Contamination - 10,000 cpm above background on a wipe

4. Take samples with an air sampler if conditions permit.

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E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-4524
REVISION NO	3
PAGE NO	2 of 2

5. Determine cause of high activity and notify Control Room.
6. Rope off and post areas of high air activity or radiation as conditions permit.
7. Determine habitability of Health Physics, Laboratory, and Counting Room areas. Notify the Control Room.
8. Assist Control Room personnel, when requested, in evaluating the extent of radioactive material released or potential for release, using effluent monitor readings or other air samplers readily available, meteorological instrumentation, and procedure HNP-4853 to estimate dose rates to persons beyond the plant site boundary.
9. Notify Shift Supervisor if conditions exist that would cause a person at or beyond the plant site boundary to receive radiation exposure at action levels in HNP-4853.
10. Communicate with the Emergency Operations Facility and/or Technical Support Center in determining extent of any activity release.
11. Document survey findings on standard health physics survey forms. (See HNP-8012)
12. Return to the OSC when released by the Shift Supervisor or HP Supervisor.

PROCEDURE

HNP-4526

PROCEDURE NUMBER

LAB

RESPONSIBLE SECTION

SAFETY RELATED (X)

NON-SAFETY RELATED ()

[illegible]

MANUAL SET

We.
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4526

Revision No. 3

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<u>Tim Kirkham</u>	<u>1-26-83</u>	<u>W.H. Rizer</u>	<u>2/6/83</u>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
() Yes (X) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (X) Neither
(See back for Safety Evaluation if required).

Safety Related (X) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (X) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

Page 2 C.B. delete Shift Supervisor and replace with
Operations Supervisor

PRB RECOMMENDS APPROVAL: (X) Yes () No

Steve Tim
PRB Secretary

83 - 38

PRB Number

2-22-83
Date

HNP-3

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.

1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

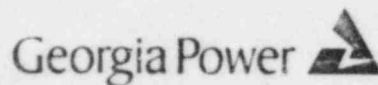
2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

HNP-9

APPROVED
See Title Page
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E. I. HATCH NUCLEAR PLANT



PROCEDURE NO.
HNP-4526
REVISION NO.
4
PAGE NO.
1 of 2

EC

ALERT EMERGENCY - RALLY POINT LEADER

A. CONDITION

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline (PAG) exposure levels.

B. REFERENCE

HNP-4520


HNP-4521

C. ACTION

1. Once the Rally Point Leader is designated by the OSC manager, he should appoint approximately three RET members to report with him to gate 16, which is the primary rally point.
2. Determine if the rally point is habitable using survey meters and the following criteria:
 - a. area dose rate less than 0.5 mr/hr, and
 - b. contamination less than 100 CPM above background.
3. If conditions at the primary rally point (gate 16) do not satisfy the criteria in C.2, then proceed to an alternate rally point. The alternate rally point is The Skills Training Building or The Environmental Building.
4. Determine if the alternate rally point satisfies the criteria in step C.2.
5. Return to gate 16.
6. Notify the Control Room of results.
7. Prepare for evacuation of plant personnel if the emergency class should escalate, periodically confirming that conditions at the rally point are still acceptable.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-4526
REVISION NO
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8. Do not release members of the Radiological Emergency Team, except to report to the EOF, until directed to do so by the Emergency Director or Operations Supervisor if the Emergency Director cannot be contacted.
9. Assist in routing ambulance to pick up any injured personnel. Assure ambulance driver and attendant are provided with TLD badge and pocket dosimeter on entry.
10. Assist Emergency Director in bringing emergency under control.

PROCEDURE

PROCEDURE TITLE

PROCEDURE NUMBER

RESPONSIBLE SECTION

NON-SAFETY RELATED ()

HNP-9

we
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8010

Revision No. 15

1043

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Wade McLeod</i>	<i>10-2-82</i>	<i>W. H. Rizer</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
() Yes (☒) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (☒) Neither
(See back for Safety Evaluation if required).

Safety Related (☒) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (☒) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST *A. pg 1 include reference to NPO Hood, C2 pg 1- Delete reference to Reg. Guide 8.15, C3 pg 1 Delete reference to NUREG 0041 + add reference to NPO manual. E. pg 2 delete reference to table 1, F. pg 3A include approval and description of supplied Air Hood. G.1. pg 5 delete table 1 and add reference to 10CFR 20.103 Appendix A, H.1 pg 7 correct word "and", H.3 pg 8 change approval reference to MSHA. I.2. a. pg 9 Correct proper reference sections, delete reference to 1.1. b, I.2. b. Correct proper reference section. I.3. a. pg 9. Correct proper reference section, I.3. c. pg 10. Add instructions for proper operation position. I.3. g. pg 10 Correct proper reference section, I.3. k. pg 10 Correct proper reference section. I.7. a. 4 pg 11 Add procedure for use of Supplied Air Hood. I.5. f. pg 13 Correct proper reference section, I.5. i. pg 13 Add instructions for removing 401 unit, I.5. k. 1. pg 14 Correct proper reference section I.6. a. pg 14 Correct proper reference section. I.7. a. pg 14 Add instructions for removing respirator facepiece when exiting high contamination areas.*

PRB RECOMMENDS APPROVAL: (☒) Yes () No

Steve Jipps

PRB Secretary

83-38

PRB Number

2-22-83

Date

HNP-3

MANUAL SET

we

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8010

Revision No. 15

2013

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<u>Wade McLeod</u>	<u>10-2-82</u>	<u>W.H. Poyner</u>	<u>2-6-83</u>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST J.1. pg 15 delete Anthropometric facial measurements J.1.c

pg 15. Add quantitative fit test to procedure J.1.c (4) pg 16. Add instructions
for documentation of Quantitative Test M.1. pg 18 delete Reference to NUREG
0041. N.5 pg 21 delete Check list inside each 401 unit. N.8 pg 21
Add procedure for testing manifold-filter regulator. N.8 note pg 22
MSA regulator can be tested by non-certified techs. O.1.a pg 22. Specify
Alpha fired contamination limit. Page 25 Appendix I delete Table 1 and add Form 2A
and 26. Pg. 24 delete Table 1. Page 26 Table 2. delete Full Facepiece PD request.
specify Concentration Unit for Hoods and correct description of MSA SCBA unit
is pressure demand Page 27 Form 1 correct proper reference section
Page 28 Form 2A Specify label training, EPC Dept or Company,
delete Anthropometric facial measurements

PRB RECOMMENDS APPROVAL: ☐ Yes ☐ No

PRB Secretary

PRB Number

Date

HNP-9

MANUAL SET

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8010

Revision No. ^{12 21 82} 1615

3073

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Wade McLeod</i>	<i>10-2-82</i>	<i>W. J. Ryan</i>	<i>2-6-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
 () Yes (☒) No

CHANGE INVOLVES:

() An unreviewed Safety Question () Tech. Specs. (☒) Neither
 (See back for Safety Evaluation if required).

Safety Related (☒) Non-Safety Related ()

Safety/Non-safety Status Change () Yes (☒) No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST Page 28 Form 2A continued delete final
abnormalities, include graphical EIT Test results, specify that the
individual has only been trained for following systems. Page 29
Form 2B Specify form for Exception Test.
Page 30 Form 3 Delete "Repairs can only be left in an
acceptable condition". They may also be left in out of
service condition if repairs or decontamination cannot be
done immediately. Pg. 1 reverse Safety & Reference sections.

PRB RECOMMENDS APPROVAL: () Yes () No

PRB Secretary

PRB Number

Date

HNP-9

MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-8010
REVISION NO
16
PAGE NO
1 of 36

USE AND CARE OF RESPIRATORS

A. PURPOSE

To provide instructions for the proper selection, use, maintenance, control and storage of respiratory equipment.

This procedure covers the following respiratory devices:

- MSA Ultra Filter Respirator
- MSA Pressure Demand Apparatus (Air Pack)
- MSA Constant Flow Air Line Respirator
- NPD Supplied Air Respirator (Hood)

B. REFERENCES

1. 10 CFR20 para. 20.103
2. MSA Respirators Instructions for Use and Maintenance
3. NPD Supplied Air Respirators Instruction Manual
4. A.N.S.I. Z-88.2 (1969)

C. SAFETY

Observe Radiation Protection Procedures.

D. MANAGEMENT POLICY


It is the Georgia Power management policy to minimize the inhalation of airborne radioactive materials to all personnel assigned or visiting Plant E. I. Hatch. For this reason it is mandatory that personnel at Plant Hatch adhere to all procedures, and policies relating to the respiratory protection program.

The management policy will be normally accomplished by the application of engineering controls, including process, containment, and ventilation equipment. Periodic evaluation of the respiratory protection program will provide the management with the means for determining what additional measures, equipment and controls may be necessary, where practical, to further meet the objective, while in turn reduce the need for wearing respiratory equipment.

Routine plant operations are planned activities that are generally repetitive and occur with various frequencies. Operations of this nature have been considered in the design of the plant and appropriate equipment installed to minimize most airborne situations.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8010
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The use of respirators as a substitute for practical engineering controls in routine operations is inappropriate. Therefore the installed process, containment, and ventilation equipment will be utilized, in addition to preplanning of work, to minimize the use of respiratory equipment.

Nonroutine operations are activities that are either nonrepetitive or else occur so infrequently that adequate limitation of exposures by engineering controls is impractical. For operations of this type respiratory equipment will be used where needed to provide protection.

Emergency operations are unplanned events characterized by risks sufficient to require immediate action or mitigate an abrupt or rapidly deteriorating situation. Procedures have been issued for handling most emergency situations and are contained in procedure series HNP-4000-4999. Adequate quantities of and locations for respiratory protection equipment are provided to handle emergency situations. Training and retraining of personnel in emergency situations requiring respiratory protection is provided.

Prior to issuing a respirator to an individual, he/she will be informed of the following policy: Persons wearing respirators may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief.

E. REGULATORY REQUIREMENTS

10 CFR20 paragraph 20.103 specifies regulations regarding exposure of individuals to concentrations of radioactive materials in air in restricted areas. This procedure has been written to carry out the regulations.


F. DESCRIPTION OF RESPIRATORS

1. Ultra Filter Full Facepiece Respirator

This respirator is a full facepiece unit with a single or double cartridge providing protection factor of 50 against dust, fumes, and mists having a time weighted average less than 0.05 milligram per cubic meter. The respirator with the rectangular ultra filter cartridge has an approval No. TC 21C-150. The respirator with the round ultra filter Type H cartridge has an approval No. TC 21C-155.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO. HNP-8010
REVISION NO. 16
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NOTE

This respirator removes only dispersoids from the air. It gives no protection against gases, vapors, or oxygen deficiency (less than 19.5% O₂).

2

2. Pressure Demand Apparatus (Air Pack)

The Pressure Demand Apparatus (Air Pack) consists of a high pressure cylinder, a pressure demand regulator connected by a high pressure tube to the cylinder, a facepiece and tube assembly with an exhalation valve, and a harness assembly for mounting the complete apparatus on the body. The unit maintains a slight positive pressure inside the facepiece during inhalation, thus minimizing potential air in-leakage into the facepiece. The unit contains an audible signal device to indicate when the breathing supply has dropped to a point where the user must return to fresh air. The unit is rated for 30 minutes service. Actual service time will depend on the user and his level of exertion. The unit has an approval No. TC13F-29. It can be used in oxygen deficient and in toxic atmospheric conditions and has a protection factor of 10,000 for particulates, gases and vapors.

3. Constant Flow Air Line Respirator - Full facepiece

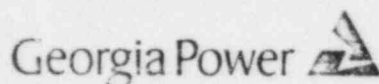
The Constant Flow Air Line Respirator is a respirator approved for use in atmospheres not immediately hazardous to life or health. The unit consists of a facepiece and tube assembly, low pressure control valve, from 25-300 feet of air hose, and a portable air filter and regulator. Breathing air for this unit is provided by the plant service air compressors. The service air is filtered and reduced in pressure to 35-40 psig by the portable air filter and regulator to meet the requirements of the respirator. With this respirator, a continuous flow of breathable air is supplied to the facepiece and provides a cooling effect as it meets the respiratory requirements of the wearer. The unit has an approval No. TC19C-78 and provides a protection factor of 2000 for particulates, gases and vapors.

4. Hoods

The Supplied-Air Hood is approved for respiratory protection against atmospheres not immediately dangerous to life or health and contains \geq 19.5% oxygen. The unit consists of a hood, cape, air distribution unit, belt, air line hose and source of clean respirable air (Class D or higher quality). The respirator has a MSHA-NIOSH approval TC-19C-140.

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E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-8010
REVISION NO	16
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A protection factor of up to 2000 may only be used when the air flow is maintained at the manufacturer's recommended maximum rate of 15 SCFM. The following Table will be used to establish pressure settings for the Air Supplied Hood.

LENGTH (FEET)	NO OF SECTIONS	PRESSURE RANGE (PSIG)	
		MINIMUM	MAXIMUM
25-50	1 or 2	20	34 (28*)
75-100	1 - 4	25	45
125-175	2 - 6	30	50
200-275	2 - 6	38	55

* Maximum Pressure of 28 PSIG will Hansen (B) and snap-tite (D) fittings.

NOTE

A protection factor of 2000 may only be used when the pressure is regulated at the maximum pressure settings listed in the above Table. Pressure settings less than the maximum range and greater than minimum range will drop the protection factor to 1000. Never set pressure below the minimum range nor higher than the maximum range.


G. SELECTION OF RESPIRATORS FOR USE

NOTE

Respiratory protection devices may be required in any situation arising from plant operations where the potential for airborne radioactivity, oxygen deficiency, or toxic atmospheres exists. In such cases, the air will be monitored by Health Physics or other qualified personnel and the necessary protective devices specified according to the concentration and type of airborne contaminants present. It is the responsibility of the individual and his supervisor to notify Health Physics personnel when working with radioactive or hazardous material that are likely to become airborne. Every precaution should be taken to keep air contamination to a minimum through use of proper ventilation and prior decontamination of equipment or work areas.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-2010
REVISION NO
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1. Regulatory limits and rules.

Respiratory protective equipment will be selected to provide a protection factor greater than the multiple by which peak concentrations of radioactive materials are expected to exceed the values specified in Table 1 Column 1 of Appendix B to 10 CFR20. The equipment selected is to be used so that the average concentration of radioactive material in the air that is inhaled during any period of uninterrupted use in an airborne radioactivity area, on any day, by any individual using the equipment, will not exceed the values specified in Table I, Column 1 of Appendix B to 10CFR20.

For purposes of this procedure, the concentration of radioactive material in the air that is inhaled when respirators are worn may be initially estimated by dividing the ambient concentration in air by the protection factor specified in 10 CFR 20.103 Appendix A. If a respirator user's intake of radioactive materials is later determined by other measurements to have been greater than that expected from initial estimates of radioactive materials in the air the user inhales, the greater quantity is to be used in evaluating exposures. If it is less than that initially estimated, the lesser quantity may be used in evaluating exposures.

2. Administrative rules and limits.

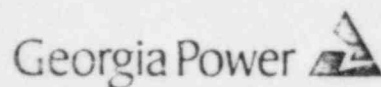
- a. Section E and paragraph G.1 prescribe rules and regulations which shall not be exceeded. For administrative purposes Table 1 will be used for selecting respirators.
- b. If airborne conditions exist which require consideration toward exceeding the administrative limits in Table 1, a laboratory supervisor must be consulted and his approval received before using greater values.

3. Selection procedure.

- a. Determine the radiological (external radiation and airborne) conditions in the work area using the procedures HNP-8005, 8012, 8013. Air samples should be taken as near the breathing zone where the work will be performed as possible. (Also if the worker has to pass through an airborne area to get to the work place).
- b. If air sampling confirms that an airborne condition, as defined in HNP-8003, exists in the work area, respiratory protection equipment, increased surveillance, or limitation of working times is warranted.

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E. I. HATCH NUCLEAR PLANT



PROCEDURE NO. HNP-8010
REVISION NO. 16
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- c. Consider the type of work, work hazards and locations, time to complete the work, ambient conditions at the work location, equipment to be used by the worker, and the potential for airborne conditions to develop during the work period (i.e. highly contaminated areas and equipment, opening of equipment during the work, air movement in the work location, cutting and welding work, etc.).
- d. Consult with a laboratory supervisor or designated alternate and select the proper respirator for the work conditions using Table 1 and paragraph b and c above.
- e. Issue the respiratory equipment per Section H.

The worker, after proper training, will wear the respirator using Section I as guidance for donning the equipment.

4. Determination of Airborne Radiation Exposure.

- a. Anytime an individual is likely to inhale, for any two hours in a day or ten hours in one week, radioactive materials in uniform concentrations as specified in Appendix B. Table 1 Column 1 of 10CFR20, the following calculations shall be made to determine levels of airborne radiation exposure.
- b. From the data on HNP-8013 Data Package 1, Data Sheet 1 and HNP-8008 Figure 2, calculate the exposure to airborne radioactive materials as follows:

$$MPC - HRS = \text{Hours in Area multiplied by } \sum_{N=1}^K \frac{\text{Activity}_N}{(PF)_N \cdot MPC_N}$$

WHERE

K = Number of nuclides in the air

Activity_N = Activity of the N^{th} Nuclide in uci/cc

$(PF)_N$ = Protection factor of the respirator for the N^{th} Nuclide (See 10CFR 20.103 Appendix A)


MPC_N = MPC of the N^{th} Nuclide in u ci/cc

Hours in Area = Stay time in the airborne area in hours

- c. Log the airborne exposure in MPC HRS for the appropriate day on Form 5 (Data Package 3) using the results obtained from G.4.b.

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NOTE


If an individual's airborne exposure exceeds 2 MPC HRS in any one day or 10 MPC - HRS in any one week then that individual's intake will be assessed by appropriate methods as outlined in Section L and all his exposure to airborne radioactive materials will be documented on Form 5 (Data Package 3) for the current calendar quarter including those amounts of exposure below 2 MPC - Hrs. in a day or 10 MPC - Hrs. in a week..

H. CONTROL, ISSUANCE, PROPER USE AND RETURN OF RESPIRATORY EQUIPMENT

1. The Health Physics staff controls the issuance, proper use, inspection, cleaning and repair, testing and fitting, spare parts, and quantities of respirator equipment required. (The Regulatory Specialist handles special training for the fire brigade team on SCBA). Training is conducted by the Training Department.
2. Respiratory equipment will be issued only to.
 - a. Those persons who have been trained, fitted and tested for that type equipment.
 - b. Those persons whose facial hair does not interfere with the seal of the respirator.
 - c. Those persons who have received medical approval by a physician to wear respirators.
3. Only MSHA/NIOSH approved equipment will be used when taking credit for the use of respirators in protecting personnel from airborne activity.
4. Respiratory equipment will be issued using a Radiation Work Permit procedure, except during emergency conditions.
5. Adequate surveillance and surveys of the work activity by the Health Physics staff will assure proper use of the equipment.
6. The Health Physics staff will conduct an adequate number of air surveys during the work period to verify and assess radiological conditions and exposure to personnel.
7. Facelets will not be used for protection against airborne radionuclides.
8. Equipment will be used within the limitations for its type and make of use as described in this procedure.

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9. Only the SCBA equipment is to be used as emergency devices.
10. Where required, spectacle kits will be furnished to permanent plant personnel.
11. Where required, goggles, anti-fog compounds and communication gear will be furnished to respiratory users.
12. Contact lenses are not to be worn with full-facepiece respirators.
13. Air purifying respirators are not to be used in oxygen deficient atmospheres or atmospheres immediately hazardous to life or health.
14. No credit will be taken for use of sorbent cartridges against radioactive materials.
15. Only high efficiency cartridges, as described in Section F will be used in air purifying respirators when making allowance for the use of respiratory equipment in estimating exposures of individuals to airborne radioactive materials.
16. Filter cartridges on air purifying respirators must be replaced with a fresh cartridge after one work day's use by one individual.
17. Respiratory equipment except emergency equipment, will be issued by and returned to the Health Physics staff. Issuance will be controlled through an RWP permit, a Respirator Clearance List (or Respirator Clearance Card), and the use of Form 6 (Data Package 4). The normal method of issuance will be through the use of the clearance card unless exempted by the H.P. Superintendent or designee. In lieu of Form 6 (Data Package 4), Health Physics may control issuance and return of respirators at established control points by the worker surrendering the respirator clearance card to the Health Physics technician upon issuance. This card will be retained until the respirators are returned.

I. USING THE RESPIRATORS


1. Health Physics will issue the proper respirator for the work to be performed.

NOTE

- a. Each respirator user is emphatically advised that he should immediately leave the area for relief from respirator use in case of equipment malfunction, physical or psychological discomfort, or any other condition that might cause reduction in the protection afforded the user.

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- b. Respiratory protective devices should never be worn when a satisfactory face seal cannot be obtained.
- c. Custom Comfo Aerosol - half face respirator will not be used for respiratory protection.
- 2. Full facepiece w/type H Ultra Filter Cartridge.
 - a. Perform Steps I.6. for donning the facepiece.
 - b. Remove the facepiece after use per subsection I.7.
- 3. Constant flow air line respirators (full facepiece).
 - a. Inspect equipment as per Step N.1 and N.4.
 - b. Bleed off the house service air line to remove any condensate which may have formed in the system prior to connecting the portable filter and regulator to the service air line.
 - c. Connect the portable filter and regulator unit to a house service air line, using the air hose provided. Attention should be made to keep the unit out of the contaminated area; but if this is not possible, it should be wrapped in plastic. Operate the unit in the upright position only.
 - d. Tag the service air outlet with a "To Be Operated by H.P. only" Tag.
 - e. Adjust the regulator for 35-40 psi. Bleed off the filter trap for moisture.
 - f. Place the control valve on a belt or loop on the left side of the body.
 - g. Put on the facepiece as in subsection I.6.
 - h. Connect 25-300 ft. of MSA air hose from portable filter regulator unit to the control valve. Then connect facepiece breathing tube to the control valve.
 - i. After leaving the airborne or work area, do not remove the facepiece until outer pair of gloves, coveralls and shoe covers are removed. (This may not be possible in all cases).
 - j. Disconnect breathing tube and air line hose from the control valve. Disconnect air line hose at outlet of filter regulator unit.

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- k. Remove facepiece as in subsection I.7.
- l. Shut off air supply to filter-regulator unit and disconnect hose.

NOTE


Do not perform this step until all persons are through using the filter-regulator unit.

- m. Place all equipment in designated place for surveying and cleanup.
 - n. The plant service air compressors are equipped with a Control Room annunciated high temperature alarm. If the Control Room receives a high temperature alarm, they will announce over the P.A. system that high temperature conditions exist in the Unit 1 and/or Unit 2 service air compressors. They will also announce that all personnel using in-line air respirators are to remove their respirators and exit the work area following proper undressing procedures. The Control Room will also notify the Health Physics Foreman who will assure that all persons using air line respirators have removed their respirators and exited the work area.
4. Constant Flow - Air Line Respirator (Hood)
- a. Follow Steps I.3.b., c., d.
 - b. Adjust the regulator pressure according to F.4.b.
 - c. After hood is inflated, place headpiece over head seating lower edge of headpiece securely on shoulders.
 - d. Place inner cape against body and smooth out folds and wrinkles. Tape inner bib together at sides.
 - e. Fold inner cape at shoulders to eliminate the excess material extending over shoulder.
 - f. Put on outer protective clothing and smooth out folds and wrinkles of outer cape against outer P.C.'s.
 - g. Tape outer capes together at sides. Tighten belt over outer cape and connect air line to belt. Adjust hood assembly for minimum restriction of head movement.
 - h. Reset pressure regulator as necessary to assure adequate air flow (See F.4.b.).

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5. MSA Air Pack Model 401-pressure demand

- a. Check the pressure gauge in the cylinder valve to insure that the cylinder is full (2216 psi pressure). If there is less pressure, the service life will be reduced accordingly.
- b. Put on the apparatus using either of the following methods:
 - (1) Open the lid of the case and extend the shoulder straps to their full length. Lean forward; grasp the cylinder and backplate firmly, with both hands, between the cylinder clamp and the waist belt. Lift the apparatus straight up and over the head and rest it on your back. The shoulder straps will fall into place over the shoulders. Adjust straps before straightening up. Fasten waist belt snugly. Should further adjustment be necessary, lean forward and adjust straps. Use of chest strap is optional.
 - (2) Extend narrow shoulder straps. Don the apparatus like a vest. Lean forward while the shoulder straps are being adjusted. Fasten waist belt securely and snap chest strap if desired.
- c. Open the cylinder valve handwheel fully (at least 3 turns) and close the By-Pass (red) handwheel on the Demand Regulator.
- d. Place palm of hand over the Pressure Demand Regulator outlet firmly to block it leaktight. This is necessary as the pressure Demand Regulator is spring loaded and air will flow automatically if the outlet is not blocked.
- e. Open the Main Line (yellow) handwheel fully and observe the pressure gauge on the Regulator. This gauge indicates the pressure in the cylinder and should read 2216 psig \pm 100 psig if fully charged. If there is less pressure in the cylinder the service life will be reduced accordingly. Turn off the cylinder valve and watch the pressure gauge on the regulator. There should be no drop in pressure if the equipment is leaktight. If there is noticeable deflection of the needle the equipment should be checked and the leak corrected before entering a toxic atmosphere. Shut off Main-Line Valve.
- f. Put on respirator as per subsection I.6.

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- g. Connect mask hose to regulator. Open Main-Line Valve fully.
- h. Breathe normally as the apparatus automatically satisfies any breathing requirement.

NOTE

It is necessary to periodically check the pressure gauge on the Pressure Demand Regulator as it continually indicates the pressure in the cylinder. When the needle reaches approximately 540 psi on the pressure gauge, the Audi-Larm Signal will begin ringing. When the bell starts ringing, or when the pressure reaches 540 psi, it is time to return to fresh air.

NOTE

During normal use the By-Pass (red) valve is closed and is used only if the Pressure Demand Regulator becomes inoperative. It provides a continuous flow and should be opened and the By-Pass valve adjusted to provide the flow desired. Leave hazardous area immediately since life of apparatus is greatly diminished when By-Pass valve is being used.

- i. After leaving the airborne area, do not remove the facepiece until outer pair of gloves is removed. If high contamination conditions exists in the work area, then two pair of rubber gloves should be worn to prevent spreading of contamination to the hands. All practical efforts should be made to keep the regulator tank and harness from becoming contaminated.
- j. Unlock the lever on the cylinder valve and close the valve. Do not use excessive force as the valve closes leaktight with little effort.
- k. Release pressure in high pressure hose by breathing until air is exhausted.


NOTE

Do NOT use By-Pass valve to exhaust air pressure.

- l. Remove facepiece as in subsection I.7.

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6. Donning the facepiece

- a. Inspect the facepiece to be sure that all parts are in good condition and installed properly. Rubber parts should be pliable and not cracked. See section N for details.
- b. Pull out the facepiece headband straps so that the ends are at the buckles and grip facepiece between the thumb and fingers. Insert chin well into the lower part of the facepiece and pull the headbands back over the head. To obtain a firm and comfortable fit against the facepiece at all points, adjust headbands as follows:
 - (1) See that straps lie flat against head.
 - (2) Tighten lower or neck straps.
 - (3) Tighten the side straps (do not touch forehead or front strap).
 - (4) Place both hands on headband pad and push in toward the neck.
 - (5) Tighten forehead or front straps a few notches if necessary.
 - (6) Check for proper seal using the field testing procedure in subsection J.2.

7. Removing the facepiece

- a. After using the respirator remove the outer pair of contaminated gloves. Bend your body forward at the waist until the chest is parallel to the floor. Then remove the facepiece by grasping the cartridge housing and lifting outward. (For airline respirators and SCBA's, grasp breathing tube connection at the facepiece).

CAUTION

Care should be taken when removing respirator to insure that open areas of the face do not become contaminated from contact with the equipment. AVOID UNNECESSARY JERKY MOTIONS WITH THE FACEPIECE AS ANY CONTAMINATION MAY BE SHAKEN OFF AND ON TO YOU. If high contamination conditions exist in the work area, then two pair of rubber gloves should be worn to prevent the possible spread of contamination.

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- b. Place facepiece along with all associated respiratory equipment in a designated location for survey and cleanup. DO NOT place in contaminated clothing storage drums.

WARNING

Respiratory equipment is a personnel safety device and should not be mistreated (i.e. thrown, kicked, dropped, mutilated). Personnel found abusing this equipment will receive disciplinary action.

- c. Survey yourself for contamination, making a very thorough survey of the face and head. If contamination is found contact Health Physics immediately.


J. FITTING AND TESTING

1. Initial Fitting and Testing

- a. Each person requiring the use of a respirator will be individually fitted for the particular facepiece prior to being allowed use of the respirator equipment. No person with facial hair interfering with the respirator seal area will be fitted and tested.
- b. Any facial abnormalities will be documented on Form 2 and will assist in identifying those persons who might have more difficulty in obtaining a good seal with a respirator.
- c. A qualitative or quantitative test will be performed for each type of facepiece. Quantitative test results, (if employed) will be documented on the strip chart paper and filed with the Form 2 in the individuals dosimetry file. See HNP-8033. The qualitative test will be performed as follows:
 - (1) The person dons the respirator with an organic cartridge attached.
 - (2) The person checks the facepiece seal using the negative pressure test as described in J.2.b.
 - (3) The instructor will test the fit during normal breathing by waving a cotton or stencil brush filled with isoamyl acetate gently near the periphery of the facepiece. Smoke tubes, when available, may also be used. If odor is detected, the wearer must re-adjust the facepiece and the test redone.

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NOTE

When practical, a test chamber will be used in lieu of the cotton or stencil brush. Evaporate about 173 milliliters of isoamyl acetate for each 1000 cubic feet of room volume. (Do not use heat for evaporation).


- (4) The instructor may then have the wearer perform the following movements:
 - (a) deep breathing
 - (b) moving head from side to side (slowly)
 - (c) moving head up and down (slowly)
 - (d) frown
 - (e) talking (e.g., speaking a short passage aloud)
 - (f) normal breathing.
- (5) The instructor will then re-check the seal with isoamyl acetate or smoke tube.
- (6) If the tests are acceptable (no leakage) it will be documented on Form 2.

2. Field Testing

- a. Where practical, respirators will be tested in the field using either amyl acetate or irritant smoke.
- b. Where it is impractical, a negative pressure test will be performed as follows:
 - (1) Close off the inlet opening of the canister or breathing tube by covering it with the palm of the hand
 - (2) Gently inhale so that facepiece collapses slightly.
 - (3) Hold breath for 10 seconds.
 - (4) If facepiece remains in slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is satisfactory.
 - (5) If unsatisfactory do not use the respirator and contact Health Physics.

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K. MEDICAL REQUIREMENT

All personnel who wear respirators will be evaluated by competent medical personnel prior to an assignment requiring such use. The evaluation will determine if the individual is physically able to perform the work and use the respiratory protective equipment. A physician will determine what health and physical conditions are pertinent. The medical status of each respirator user will be reviewed annually.

L. BIOASSAYS AND SURVEYS

1. Air sampling and contamination surveys

A comprehensive air sampling and contamination survey program is in effect to identify radioactive hazards to evaluate individual exposures, and to permit proper selection of respiratory protective equipment. Surveys are performed on a routine and special basis per the use of procedures HNP-8013, 8012, 8008, 8005, 8050 and applicable instrument operating procedures. High-efficiency (greater than 99%) filter media are used to measure airborne particulate concentrations. Activated charcoal is used to determine radio-iodine concentrations.

2. Bioassays

NOTE

Refer to HNP-8021 and 8003

a. Whole body counting -


- (1) It is the intent to obtain a whole body count or urinalysis on each G.P.C. employee who may have been exposed to airborne radioactivity at least once each year.
- (2) Whole body counts will also be made where suspect internal contamination has occurred.

b. Urinalysis

- (1) A fission product and tritium analysis will be performed on selected personnel who may have been exposed to airborne radioactivity.
- (2) The above analysis will also be made, when deemed necessary, where suspect internal contamination has occurred.

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- c. Nasal, throat swabs or washings and breath samples will be performed as necessary on suspect inhalation cases to serve as a qualitative exposure index for radionuclides.
- d. Follow up sampling (Whole body, urinalysis, nasal throat swabs, breath samples, etc.) will be performed and will be frequent enough to evaluate the uptake of radionuclides after an incident. The sample collection will be appropriately timed to permit accurate evaluation of the total intake and the resultant dose.

NOTE


It is noted that there are extenuating circumstances which may prevent whole body counting of all personnel affected by this procedure. Such situations as persons leaving the plant site without proper notification to the management, whole body counting equipment malfunction at critical counting times and scheduling impossibilities will prevent a 100% whole body counting program. The frequency of these events, should not diminish the overall effectiveness of the bioassay program however.

M. RESPIRABLE AIR REQUIREMENT

1. All breathing air supplied by air compressors and bottled air will meet the minimum requirements of Grade D air as prescribed by the Compressed Gas Association or better. If high temperature alarm is received for service air compressors, then air quality can no longer be guaranteed due to possible CO concentrations. See Section I.3.n. for details.
2. Samples of air from air supply sources will be taken quarterly and mailed to an outside laboratory for testing.
3. Oxygen and breathing air are not to be used in the same apparatus.
4. Proper fittings will be used with supplied air equipment.
5. Oxygen shall never be used with air line respirators.
6. All air cylinders used in the MSA 401 units will have the words "Breathing Air" on the cylinder.

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N. INSPECTION AND MAINTENANCE


All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to insure that it is in satisfactory working condition. All routinely used respirators shall be inspected before and after use and at least monthly and shall have an inspection sticker.

An inspection sticker shall be attached to the outside and inside of each emergency respirator container and a record of inspection kept on Form 3 (Data Package 1), Respirator Monthly Inspection Report. Any respirator not meeting inspection acceptance shall be repaired or replaced. Respirators will be repaired only by personnel designated by a laboratory supervisor.

1. Facepiece and breathing tube (SCBA & Constant Air Flow)
 - a. Inspect the facepiece and breathing tube for signs of mechanical damage, deterioration, cracking or rupture. Tears occur most frequently about strap attachments, outlet valves and hose. Discard equipment damaged in this manner.
 - b. Check the protective tape and metal band bindings for deterioration. Replace as necessary.
 - c. Inspect the tab assemblies on the facepiece used for attaching head straps. All buckles should be present and in good operating condition.
 - d. Check the lens for looseness and damage. Discolored or damaged lens should be replaced.
 - e. Inspect the exhaust valve for proper sealing of the rubber diaphragm. Replace as necessary.
 - f. Check breathing tube connections for deterioration and damage and tightness. Repair or replace as necessary.
2. Ultra Filter Respirator-Full facepiece. In addition to Step 1, just prior to use:
 - a. Check that the type of cartridge is correct and that the cartridge is coupled to the respirator securely.
 - b. Examine the cartridge for damage and check that the inlet seal has not been removed.

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3. Pressure Demand Apparatus (Air Pack)

In addition to Step 1, perform the following:

- a. Check for proper operation of cylinder valve assembly.
- b. Check main pressure gauge for proper operation and that air cylinder is full (2216 ± 100 psig). If cylinder pressure is less than 2116 psig, remove air pack from service and recharge.
- c. Inspect condition of hose connection and hose to cylinder valve assembly. If hose is cracked replace it.
- d. Check operation of Main Line (yellow) valve by operating it.
- e. Check operation of low pressure alarm monthly by closing cylinder valve and cracking the Main Line (yellow) valve open. This should let the pressure decay off so the alarm should sound at about 540 psi.
- f. Check operation of regulator bypass (red) valve by operating it.
- g. Inspect all belts for signs of fraying. Inspect around side strap buckles.

4. Constant Flow Air Line Respirator-In addition to Step 1 perform the following:

- a. Check the operation of all couplings by mating them to working couplings.
- b. Check all hoses for cracks and leaks.
- c. Connect the portable air filter regulator to an air supply and check operation of the gauge, filter, regulator and inlet and outlet couplings. Check the filter trap for moisture. Pressure gauge should read 35-40 psig.

NOTE


Filter media for filters will be changed after each refueling outage for the units used during the outage.

5. MSA 401 SCBA Inspection Checklist

- a. Refer to the checklist while performing the monthly inspection. Comply with each item listed. See Form 1 (Figure 1).

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6. S.C.B.A. Breathing Air Tanks (Model 401 Air Pack).
 - a. Each steel tank will be hydrostatically tested to 3360 psig. on a 5 year frequency.
 - b. Each aluminum and fiberglass tank will be hydrostatically tested to 3360 psig on a 3 year frequency.
 - c. Form 4 (Data Package 2) will be used as a master list for determining when the testing will be performed.
 - d. Testing documents will be filed in the Document Room.
7. Semi-Annual MSA 401 Regulator Testing.
 - a. Each regulator will be tested every six months using the MSA Portable Regulator Tester.
 - b. Once the regulator passes all the tests as described in the MSA Portable Regulator Tester Manual an inspection sticker will be placed on the regulator bearing the date it was tested.
 - c. In the remarks section of the monthly respirator inspection sheet FORM 3 (Data Package 1) for the particular MSA 401 that is being tested, note it was tested and that it passed or failed its test.
8. Regulator testing for Manifold-Filter System (continuous flow respirator)
 - a. Regulators will be tested annually using a calibrated 150 psig test gauge or equivalent. Test gauge can be obtained from the Test Shop.
 - b. The regulator gauge must read plus or minus 15% of the test gauge before it is acceptable for use.
 - c. Regulators acceptable for use will have an inspection sticker placed on the regulator bearing the date it was tested.

NOTE

Only personnel trained and certified by MSA will be approved to repair MSA 401 Regulators.

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D. CLEANING AND SANITIZING

1. Monitor entire equipment as soon as possible after use to determine level of contamination. Pay particular attention to filters, exhaust valve housing and straps.

NOTE

If necessary, facepieces may be re-issued to the same person on the same day if the following limits are not exceeded on any surface of the facepiece. Alpha surveys are not required unless alpha contamination is suspected.

- a. Fixed contamination:

Beta-gamma-0.2 millirad per hour above background at contact.

Alpha-50 d/m/probe area

- b. Smearable contamination:

No detectable removable activity using a standard swipe technique (disc smear over 100 cm²).

2. Facemask and breathing tube.

The facepiece and breathing tube assembly of respirators must be cleaned, sanitized, dried, surveyed and inspected after each day's use as follows:


- a. Add one package of powdered MSA Cleaner-Sanitizer per gallon of warm water (about 120 degrees F.).
- b. Immerse equipment in the solution and scrub gently with a soft brush until clean. Take care to clean the exhalation valve in the facepiece and all other parts that exhaled air contacts. A dishwasher may be used in lieu of hand cleaning.
- c. Rinse in plain warm water (about 120 degrees F.) and then air dry.

NOTE

Do not fold head straps in front of face piece for storage.

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- d. Survey the equipment for radioactive contamination. The facepiece and breathing tube(s) must have no detectable removable activity using a standard smear survey technique. Fixed contamination shall not exceed 0.2 millirad/hour at contact beta-gamma and 50 dpm/probe area alpha. Alpha surveys are not required unless alpha contamination is suspected.
- e. Place routinely used facepieces after inspection in a clean plastic bag and store in their assigned storage locations. (During periods of high usage it will be acceptable to delete the clean plastic bag storage requirement). Place respirators assigned for emergency use only, after inspecting, in the compartments built for them and return them to their storage locations.

NOTE

Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.


3. Other equipment (harness, regulator, air cylinder, hose).
 - a. Remove the used air cylinder from the Pressure Demand Apparatus (Air Pack) and decontaminate by wiping with a wet pad of Cleaner-Sanitizer solution and then with a dry pad.
 - b. Wipe down harness, breathing bags, regulator and hose with wet pads as necessary to reduce the transferable contamination to less than 1000 dpm/100 cm² beta-gamma and 100 dpm/100 cm² alpha. Alpha surveys are not required unless alpha contamination is suspected.
 - c. Survey equipment after drying to verify contamination levels do not exceed those in Step 0.3.b.
 - d. Attach a fully charged cylinder to the harness and regulator assembly of the Pressure Demand Apparatus (Air Pack).
 - e. Store equipment in their designated areas.

P. REVIEWS AND RECORDS

1. A laboratory foreman will routinely review respiratory practices and procedures to assess the program effectiveness.

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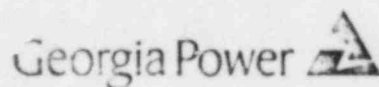
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2. Timely assessments of a particular individual's intake will be made if and when required and adequate records will be maintained for summary review and evaluation.
3. If an individual's intake exceeds 40 MPC hrs. in seven consecutive days an evaluation will be made and action taken to assure against recurrence. Records of the occurrence, evaluations and actions taken will be kept in a clear and readily identifiable form suitable for summary review and evaluation. Radiation Occurrence Forms (HNP-8005), Personnel Contamination Report (HNP-8009), Radiation Work Permits (HNP-8008) in addition to survey records, bioassay results, etc. make up most of these records.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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TABLE 1

AIRBORNE CONCENTRATION LIMITS FOR RESPIRATORS

AIR PURIFYING RESPIRATORS *

Full facepiece w/type H
Ultra filter cartridge

AIRBORNE CONCENTRATION

Particulate activity less than
40 times MPC

ATMOSPHERE SUPPLYING RESP.*

1. Air line respirators

Full facepiece-constant flow -

Particulate, gas and vapor
activity less than 1600 times
MPC

Hood-constant flow -

Particulate, gas and vapor
activity less than 1600 times
MPC when pressure is maintained
at manufacturer's maximum rate
(See F.4.)

Suit - constant flow -

No credit allowed unless suit
is MSHA/NIOSH approved. See a
laboratory supervisor

* Air line and air purifying respirators can only be used in
atmospheres not immediately hazardous to life or health.

2. Self-Contained Breathing

Apparatus (SCBA)


MSA Air Pack Model

401 Pressure - demand

Particulates, gas and vapor
activity less than 10,000 times
MPC. However, may be used in
emergency conditions in unknown
concentrations of airborne acti-
vity. Must also consider external
radiation hazards and other limi-
tations (skin absorption, etc.).

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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FIGURE 1 FORM 1

INSPECTION OF 401 SCBA FORM

FORM 1

INSPECTION OF 401 SCBA

1. Items of inspection on facepiece and breathing tube.
 - a. Insure facepiece is a 401 mask with spring loaded exhaust valve.
 - b. Mechanical damage.
 - c. Cracking or ruptures.
 - d. Tears around strap attachments, outlet valve and hoses.
 - e. Deterioration metal band bindings.
 - f. Stuck exhaust valve.
 - g. Damaged exhaust valve.
 - h. Deterioration, damage, tightness of breathing tube.
 - i. Missing clips on face lens.
 - j. Cracking or deterioration of gaskets between facepiece, hose, regulator and hose.
 - k. Insure all straps on facepiece are adjusted fully out.
2. Items of inspection on Pressure Demand Apparatus (Air Pack).
 - a. Insure cylinder is full.
 - b. Inspect cylinder for physical damage.
 - c. Damage and proper operation of cylinder valve assembly.
 - d. Damage and proper operation of low pressure alarm. (540 PSI)
 - e. Damage to connections on hose from cylinder to regulator.
 - f. Damage and proper operation of pressure gauge on tank.
 - g. Cracks in hose from regulator to cylinder.
 - h. Operation of main line (Yellow).
 - i. Operation of bypass line (Red).
 - j. Check air tightness by pressure drop (see section I.5.d. & e.).
 - k. Unusual sounds in the regulator (whistling, chattering, clicking, or rattling).
 - l. Damage and proper operation of the pressure gauge on the regulator.
 - m. Physical or mechanical damage to the regulator.
 - n. Fraying of belts and straps on harness.
 - o. Insure all belts and straps are adjusted fully out.
 - p. Insure all buckles will work properly.
 - q. Insure cylinder is in the harness correct.

HNP-8010 R16

MANUAL SET

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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FIGURE 2
FORM 2A

RESPIRATORY PROTECTION TRAINING FORM

FORM 2A
RESPIRATORY PROTECTION TRAINING
INITIAL TRAINING

DATE: _____

NAME (last, first, middle initial) GPC DEPT. BADGE # S.S. #
OR CO.

I have received instructions in respiratory protection, and I have been advised that I may leave an area when using a respirator at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief.

TRAINEE SIGNATURE

Fit Test Results:	Acceptable _____	Unacceptable _____
Written Test Results:	Acceptable _____	Unacceptable _____

The above individual has been trained to use the following respiratory systems:

1. ☐ MSA Ultra Filter
2. ☐ Constant Flow
3. ☐ MSA 401 Air Pack


COMPLETED BY: _____ DATE: _____

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Georgia Power 

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FIGURE 2
FORM 28

RESPIRATORY PROTECTION TRAINING FORM

FORM 28
RESPIRATORY PROTECTION TRAINING
EXEMPTION TRAINING

DATE: _____

NAME (last, first, middle initial) GPC DEPT. BADGE # S.S. #
OR CO.

I have received instructions in respiratory protection, and I have been advised that I may leave an area when using a respirator at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other condition that might require such relief.

TRAINEE SIGNATURE

Written Test Results: Acceptable _____ Unacceptable _____


COMPLETED BY: _____ DATE: _____

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MANUAL SET

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8010
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PROCEDURE DATA PACKAGE	
DOCUMENT NO:	<u>HNP-8010-1</u>
SERIAL NO:	<u>R16-</u>
MPL NO:	<u>N/A</u>
RTYPE:	<u>G15.14</u>
XREF:	<u>N/A</u>
TOTAL SHEETS:	<u>2</u>
FREQUENCY:	<u>Monthly</u>
COMPLETED BY:	<u></u>
DATE COMPLETED:	<u></u>
I HAVE REVIEWED THIS DATA PACKAGE FOR COMPLETENESS AND AGAINST ACCEPTANCE CRITERIA IN ACCORDANCE WITH HNP-930.	
ACCEPTABLE <u></u>	UNACCEPTABLE <u></u>
REVIEWED BY:	<u></u>
DATE REVIEWED:	<u></u>
REMARKS:	<u></u> <u></u> <u></u> <u></u>


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Georgia Power 

PROCEDURE NO	HNP-8010
REVISION NO	16
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See Title Page


E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8010
REVISION NO	16
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PROCEDURE DATA PACKAGE	
DOCUMENT NO:	<u>HNP-8010-2</u>
SERIAL NO:	<u>R16-</u>
MPL NO:	<u>N/A</u>
RTYPE:	<u>G15.14</u>
XREF:	<u>N/A</u>
TOTAL SHEETS:	<u>2</u>
FREQUENCY:	<u>Annually</u>
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:	_____ _____ _____ _____

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Georgia Power 

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DATA PACKAGE 2
FORM 4

MSA RESPIRATOR (MODEL 401) S.C.B.A.
TANK HYDROSTATIC TEST MASTER LIST

YEAR: _____

[illegible]

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FIGURE 4
Page 2 of 2

MANUAL SET

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8010-3

SERIAL NO: R16-

MPL NO: N/A

RTYPE: G15.14

XREF: N/A

TOTAL SHEETS: 2

FREQUENCY: As Required

COMPLETED BY: _____

DATE COMPLETED: _____

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

ACCEPTABLE _____

UNACCEPTABLE _____

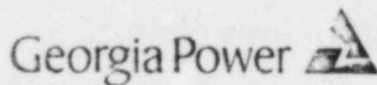
REVIEWED BY: _____

DATE REVIEWED: _____

REMARKS: _____

Doc Title Page
Doc Title Page

E. I. HATCH NUCLEAR PLANT



PROCEDURE NO	HNP-8010
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DATA PACKAGE 3 FORM 5

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EXPOSURE BY QUARTERS
(MPC-HRS)

1	2	3	4
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>


NAME: _____ SSN: _____ TLD# _____ YEAR _____

1. NOTIFY LAB FOREMAN IF 7 DAY EXPOSURE EXCEEDS 10 MPC-HRS
2. NOTIFY LAB FOREMAN IF 1 DAY EXPOSURE EXCEEDS 2 MPC-HR.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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REVISION NO	16
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PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8010-4

SERIAL NO: R16-

MPL NO: N/A

RTYPE: G15.14

XREF: N/A

TOTAL SHEETS: 2

FREQUENCY: As Required

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: _____

CONCLUSIONS

HNP-8120
PROCEDURE NUMBER

Lab
RESPONSIBLE SECTION

NON-SAFETY RELATED ()

[illegible]

MANUAL SET

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8020

Revision No. 3

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>Mike Link</i>	<i>1-24-83</i>	<i>W.H. [Signature]</i>	<i>1-24-83</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☐ Non-Safety Related ☐

Safety/Non-safety Status Change ☒ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST

Page 1, Correct reference, section C.
Page 1, Correct spelling, section D.
Page 1, Correct spelling, section E.
Page 2, Correct spelling, section G.2 and
G.4.b.
Page 3, Correct spelling, section H.12.
Page 4, Change calibration frequency
from quarterly to semi-annual

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

[Signature]
 PRB Secretary

83 - 38

PRB Number

2-22-83
 Date

HNP-3

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

See Title Page
See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8120
REVISION NO	4
PAGE NO	1 of 6

GEIGER COUNTER MODEL E-120 OPERATION AND CALIBRATION

A. PURPOSE

To provide instructions for operation and calibration of the model E-120 portable survey meter with a Geiger-Muller type detector, normally used with a HP-260 hand probe.

B. SAFETY

Observe radiation protection procedures.

C. REFERENCES

1. Geiger Counter Model E-120 Technical Manual
2. Mini-Pulser Procedure HNP-8116

D. TEST EQUIPMENT

1. Mini-Pulser with coaxial cable.
2. Gamma Check Source. (Portal Monitor Check Source)

E. DESCRIPTION OF INSTRUMENT


1. The E-120 is a portable battery operated instrument used for the detection and measurement of beta or gamma radiation. It has a geiger tube detector and the count rate is read out on a linear scale.
2. The full range of the instrument is 50 mR/hr or 70 K CPM.
3. The battery pack uses two standard D size batteries of any type commercially available.

F. DESCRIPTION OF CONTROLS

1. External controls
 - a. Switch - Five position switch turns instrument OFF, BATT, XO.1, X1, and X10 scales.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO.	HNP-8120
REVISION NO.	4
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- b. Response - Controls response time of meter to most desirable compromise between speed and fluctuation for the particular range.
- c. Reset - Discharges integrating capacitor, bringing meter to zero rapidly.
- d. Phone - Pulse output for use with earphone, speaker or external scaler.

2. Internal controls

Calibration controls - one control for each range which individually calibrates that range to agree with the Mini-pulser input.

G. OPERATION OF INSTRUMENT

1. To start instrument turn the switch to the BATT position. The meter should indicate within the BATT OK area, if not tag the instrument out with a TO SHOP tag.
2. Place a check source in a repeatable position adjacent to the detector and move the switch to the X10 scale. Compare reading on the meter to the correct value of the source. Using an 8 microcurie CS 137 check source reading should be between 20,000 & 40,000 cpm. If instrument does not read within above values, tag it out with a TO SHOP tag.
3. Push the RESET button and the reading should drop to zero rapidly, then climb back to the source reading in step 2 when the RESET is released. The RESPONSE may be adjusted to get the most desirable compromise between speed of response and meter fluctuation.
4. Interpretation of readings:

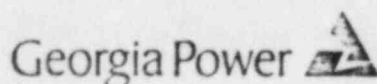
NOTE

All E-120's are calibrated to read in C.P.M. unless otherwise stated on the instrument case.

- a. The meter reading must be multiplied by the scale multiplier to obtain the proper reading. The fluctuation of the meter is normal and is caused by the random nature of radioactive decay.
- b. The E-120, used with an HP-210 or HP-260 probe, has been calibrated using a mini-pulser (pulse generator) and should be used principally for contamination survey work. They should NOT be used to measure dose rates.

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See Title Page

E. I. HATCH NUCLEAR PLANT



PROCEDURE NO HNP-3120
REVISION NO 4
PAGE NO 3 of 6

H. CALIBRATION OF INSTRUMENT

1. Remove the instrument from the case.
2. Turn the control switch to BATT position and check battery condition. Replace if necessary.
3. Connect the Mini-pulser into the probe connector.
4. Set Mini-pulser for negative pulses at 0.25 volt amplitude.
5. Set the Mini-pulser to 400 cpm, 4,000 cpm, and 40,000 cpm successively and check and record readings on Instrument Calibration Data Sheet (Figure 1) in the As Found column.
6. If readings are within $\pm 5\%$ of full scale, turn instrument OFF, remove Mini-pulser cable, place instrument in case, reconnect detector and cable, and proceed to step H.12.


NOTE

	<u>$\pm 5\%$ of full scale</u>
X 0.1 scale	35 cpm
X 1 scale	350 cpm
X 10 scale	3500 cpm

7. If reading are not within $\pm 5\%$ proceed to Step H.8.
8. Set the Mini-pulser to 400 cpm and adjust the XD.1 control for 400 cpm on the meter.
9. Set the Mini-pulser to 4,000 cpm and adjust the X1 control for 4,000 cpm on the meter.
10. Set the Mini-pulser to 40,000 cpm and adjust the X10 control for 40,000 cpm on the meter.
11. Proceed to step H.5 but record readings in the As Left column of Figure 1 if readings are now acceptable. If instrument cannot be calibrated, initiate repairs and repeat Section H.
12. Place the portal monitor check source on contact with the detector, reading should be about 20,000 cpm. Record results in the As Found column and, if within $\pm 20\%$ of actual count rate, record also in the As Left column. Count rate of the portal monitor check source is about 20,000 cpm contact with G.M. detector.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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NOTE

Normal wide fluctuation in the meter is normal with the instrument on X.1 scale.

13. If results in H.12 are not within the limits specified, replace GM detector and repeat.
14. If the instrument checks out properly, complete Instrument Calibration Data Sheet, replace calibration sticker with a new one bearing the test date and when the instrument is due for its next routine semi annual calibration.

Doc	Title	Page
Doc	Title	Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

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PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8120-1

SERIAL NO: R04-

MPL NO: D21-N

RTYPE: G15.14

XREF: N/A

TOTAL SHEETS: 2

FREQUENCY: Quarterly

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: _____

Page 1 of 2

HNP-8120 R04

FIGURE 1
Page 1 of 2

MANUAL SET

PROCEDURE

PROCEDURE TITLE

PROCEDURE NUMBER

RESPONSIBLE SECTION

NON-SAFETY RELATED ()

[illegible]

20. We.
PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8127

Revision No. 1

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<i>R. Anderson</i>	<i>11/23/82</i>	<i>W. H. Rogers</i>	<i>12/22/82</i>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☒ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST REFERENCE: DELETE HNP-1-7450 in Secte

THIS INSTRUMENT IS NOT IN THIS PROCEDURE. PG. 1

SECTION H. ALARM SET POINT: DELETE #1. HNP-1-745

IS NOT USED. ADD PARAGRAPH EXPLAINING SETPOINT

ADJUSTMENT

PRR RECOMMENDED APPROVAL: ☒ Yes ☐ No

Steve Tim
PRR Secretary

83 - 38

PRR Number

2-22-83
Date

HNP-3 8

MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO. HNP-8127
REVISION NO. 2
PAGE NO. 1 of 6

VICTOREEN G-M AREA MONITOR MODEL 856-20

A. PURPOSE

To establish a standard technique for the operation and calibration of the Victoreen G-M area monitoring system model 856-20.

B. SAFETY

Observe radiation protection procedures.

C. REFERENCE

Victoreen G-M area monitoring system model 856-20 Instruction Manual.

D. DESCRIPTION OF INSTRUMENT

1. The Victoreen G-M area monitor, model 856-20, consists of a wall mounted Geiger Muller detector and readout module. Accuracy is within $\pm 20\%$ of reading. Type of radiation detected is Gamma. Energy dependence is $\pm 15\%$ from 100 KEV to 2.5 MEV. The instrument power can be 120 VAC or 230 VAC or 18 VDC.

NOTE

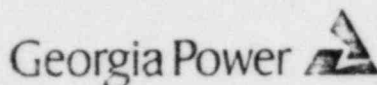
The Victoreen G-M monitor has been modified with an audible alarm as well as with its visual alarm.

The audible alarm will come on when the alarm setpoint is reached. To reset the audible alarm as well as the visual press the ALARM RESET button.

2. The readout consist of a logarithmic five decade meter (.1mR/hr to 10 R/hr).
3. The alarm system consists of a front panel red push button high alarm and a green fail safe alarm. An internal check source is activated on front panel to check meter operation and alarm if setpoint is lower than source dose rate.

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DATE
Rev. Title Page

E. I. HATCH NUCLEAR PLANT



PROCEDURE NO
HNP-2127
REVISION NO
2
PAGE NO
2 of 6

E. DESCRIPTION OF CONTROLS

1. External Controls.

a. Function Selector Switch.

This rotary switch turns the instrument "on and off" selects the operating conditions and high alarm set point (indicated by meter deflection).

b. Green Push-Button Light.

Green push button is a fail/safe indicator for power supply to the instrument or detector. Depression of this button activates instruments internal check source.

c. Red Push-Button Light.

Red push button light indicates high alarm and audible. Setpoint is fixed by internal controls. Depression of this button will reset alarm.

2. Internal Controls.

a. Computer output calibration potentiometer. R-41 is used to calibrate the computer output to the specified accuracy.

b. Alarm setpoint potentiometer. R-37 allows high alarm set point to be set.

c. Alarm meter calibration, R-53 allows calibration of alarm circuit.

d. Alarm calibration 10-end R-54 allows low alarm setpoint to be set.


e. Middle range calibration potentiometer R21 adjustment for middle range approximately 1R/hr.

f. Low range calibration potentiometer R12 adjustment for low range approximately 10 mR/hr.

g. High range calibration potentiometer C23 adjustment for high range approximately 10 R/hr.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO.
HNP-8127
REVISION NO.
2
PAGE NO.
3 of 6

F. OPERATION OF INSTRUMENT

1. Function Selector Switch.

To turn the system "ON" turn the selector switch from OFF to OPER.

2. Operate Position.

This position selects the full five-decade ranges which is read directly on the scale of the meter.

3. Alarm Position

The alarm setpoint level will be indicated by the meter deflection in this position. It is also spring loaded so as to return back to the operate position automatically.

4. Check Source.

To activate the check source, depress and hold the green push button light. The meter will be deflected because of the dose rate produced by the check source. The check source is electrically positioned to irradiate the detector and consists of radium paint covered with clear lacquer on the end of the pointer in the check source assembly (857-1-17). In the Model 857-1 there is approximately 0.02 microcuries of radium and in the 857-2 there is approximately 0.08 microcuries of radium.


As the check source is de-energized, the red pushbutton light should be depressed to avoid activating the High alarm in the event that this alarm is set below the reading of the check source. Remember that since the check source provides actual radiation to the detector, this check is not only thorough, but will produce an appropriate output on any recorders in the system.

5. High Alarm.

The red alarm light will turn "ON" when the radiation intensity exceeds the alarm setpoint. The preset level will be indicated by the meter deflection when the Function Selector switch is rotated to the alarm position.

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DATE
See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8127
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5. Alarm Reset.

A manual alarm reset mode is used in this G-M Area Monitoring System. In this mode the High alarm will lock-in after it exceeds its preset level. Depressing the red (High Alarm) push button light will reset the High Alarm. Automatic reset mode is also available by removing a jumper located on the printed circuit board of the readout module. In this mode, the High Alarm will respond to radiation exceeding the preset levels and automatically reset below the preset levels.

G. CALIBRATION OF INSTRUMENT

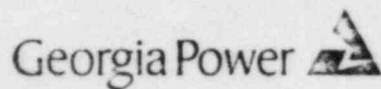
1. With instrument power supply on and in the operate position, place G-M detector in Gamma fields of 10 mR/hr, 1R/hr and 10 R/hr. Record observations for each of the three fields in the As Found Column of Figure 1.
2. If the instrument readings of Step G.1 are within $\pm 20\%$ of the true dose rate, complete Figure 1, replace the calibration sticker with a new one bearing this test date and when the instrument is next due for its semi-annual calibration.
3. If the readings are not within $\pm 20\%$ of the true dose rate, proceed to Step G.4.
4. Place instrument in 10 mR/hr Gamma field and adjust R12 adjustment to obtain a reading $\pm 20\%$ of 10 mR/hr.
5. Repeat Step G.4 for 1 R/hr field using R21 adjustment. Recheck 10 mR/hr until both are reading within $\pm 20\%$. Use same method for 10 R/hr using C23 adjustment.
6. Repeat Steps G.1 and G.2 but recording results in Figure 1 in the As Left column, if within $\pm 20\%$ of true dose rate.
7. If instrument cannot be calibrated, initiate repairs and recalibrate by repeating Section G.

H. ALARM SETPOINTS

1. Raise Cs-137 well source to upper level, open the door and shield. Turn setpoint adjustment until monitor alarms.

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E. I. HATCH NUCLEAR PLANT



PROCEDURE NO HNP-8127
REVISION NO 2
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PROCEDURE DATA PACKAGE	
DOCUMENT NO:	HNP-8127
SERIAL NO:	R02-
MPL NO:	
RTYPE:	G15.14
XREF:	
TOTAL SHEETS:	2
FREQUENCY:	
COMPLETED BY:	
DATE COMPLETED:	
I HAVE REVIEWED THIS DATA PACKAGE FOR COMPLETENESS AND AGAINST ACCEPTANCE CRITERIA IN ACCORDANCE WITH HNP-830.	
ACCEPTABLE	INACCEPTABLE
REVIEWED BY:	
DATE REVIEWED:	
REMARKS:	

PROCEDURE

HNP-8136
PROCEDURE NUMBER

Lab
RESPONSIBLE SECTION

SAFETY RELATED (X)

NON-SAFETY RELATED ()

[illegible]

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8136

Revision No. 1

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<u>Don Brown / M. Wright</u>	<u>1-19-83</u>	<u>W. H. Rozen</u>	<u>2-6-83</u>

REVISION CHANGED MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐
 Safety/Non-safety Status Change ☒ ☐ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST Follow-up to previous self-audit review
did by Don Brown. Pg 1 para B+C reversed per HNP-9,
para E change Timed Stop to Count Mode, delete
Switch to in lines E.1, b, c, & d, change 115V or 230V 50/
Hz to 115V, 60 Hz or 230V, 50 Hz, make internal full
caps, para F change Timed Stop Manual to Count Mode
move word "mode" to end of sentence, start word
"lurtop" in lines E. 2, 3, & 4 with small s, line E.5 & c
change Timed Stop Manual to Count mode and make
switches in lurtop, correct spelling on form and on
change NOTE by adding A and deleting parentheses.
Fill in NOTE at bottom of pg 2. Add number of day
on pg 5.

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve Jinn
 PRB Secretary

83-38

PRB Number

2-22-83

Date

HNP-2

BT
 MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.

1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO
HNP-3135
REVISION NO
2
PAGE NO
1 of 7

BETA COUNTER MODEL BC-4

A. PURPOSE

To insure the instrument is calibrated properly and to provide operation instructions for the user.

B. REFERENCE

BETA COUNTER MODEL BC-4 technical manual.

C. SAFETY

Observe radiation protection procedures.

D. DESCRIPTION OF INSTRUMENT

The Model BC-4 Beta Counter is a system consisting of a two-inch detector, high voltage power supply, pulse amplifier, timer and six decade readout. All circuits are solid state with use of integrated circuits.

E. DESCRIPTION OF CONTROLS

1. EXTERNAL

- a. Count Mode - Selects timed or manual counting mode.
- b. Reset-Start - Resets all appropriate circuitry to zero and starts a timed counting sequence.
- c. Count Time In Minutes - Selects desired counting time.
- d. Power - Supplies power to the instrument.
- e. 115 or 230 VAC Switch-Selects either 115V, 60 Hz, or 230V, 50 Hz.

2. INTERNAL


- a. Time Base (Timer Board) - Control for adjusting time base of the timer when instrument is used with a battery.

F. OPERATION OF INSTRUMENT

1. Turn Power Switch to ON.
2. Position Count Mode switch to desired mode.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO HNP-8136
REVISION NO 2
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3. Position Count Time In Minutes switch to counting time desired.
4. Press Reset-Start switch and release. Instrument should begin counting.
5. Daily Calibration.
 - a. Set Count Mode switch to Manual. Instrument should begin to count. Record results in Man. CK column of Data Package 1 (Data Sheet 1).
 - b. Set Count Mode switch to TIMED.
 - c. Perform a 10 minute background count and record the background counts in C.P.M. on Data Package 1 (Data Sheet 1).
 - d. Place a radioactive standard in position for counting and count for 5 minutes. Record results on Data Package 1 (Data Sheet 1) in C.P.M. and on graph developed from chi-square test.

NOTE

A TC-99m beta source centered in a stainless steel plachet should be used.

- e. The reading should be within ± 3 sigma of the source's known count rate and should be distributed around the mean count line.
- f. Calculate the counter efficiency for the geometry in step d and record on Data Package 1 (Data Sheet 1).

$$\text{Efficiency} = \frac{\text{Net C.P.M.}}{\text{D.P.M.}} \times 100$$

G. CALIBRATION OF INSTRUMENT

1. Adjust H.V. to 900 Volts. Refer to technical manual.


CAUTION

Do not over-voltage the GM tube. (900 volts)

2. Chi-Square test (Quarterly test).
 - a. Perform a one minute background count and record the background counts in BKG. CPM on Data Package 2 (Data Sheet 2).

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E. I. HATCH NUCLEAR PLANT


Georgia Power 

PROCEDURE NO HNP-8136
REVISION NO 2
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- b. Place a radioactive standard in position for counting. Use the same standard which will be used in the daily calibration.
- c. Count the source for one minute durations twenty times and record net count results on Data Package 2 (Data Sheet 2).
- d. Calculate chi-square. If results is between 7 and 35, the instrument should be functioning properly.
- e. Calcualte 1σ , 2σ and 3σ error. Develope a graph for daily calibration checks.

Use Title Page
Use Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

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PAGE NO.	4 of 7

PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8136-1

SERIAL NO: R02-

MPL NO: _____

RTYPE: G15.14

XREF: _____

TOTAL SHEETS: 2

FREQUENCY: Monthly

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: _____

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HNP-8136 R02

Page	1	Page
Page	1	Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8136
REVISION NO	2
PAGE NO	6 of 7

PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8136-2

SERIAL NO: R02-

MPL NO:

RTYPE: G15.14

XREF:

TOTAL SHEETS: 2

FREQUENCY: Quarterly

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:

Page 1 of 2


HNP-8136 R02

FIGURE 2
Page 1 of 2

MANUAL SET

10	9	8	7	6	5	4	3	2	1
10	9	8	7	6	5	4	3	2	1

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO.	HNP-8136
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DATA PACKAGE 2
CHI-SQUARE TEST
DATA SHEET 2

DATE: _____ BC-4 M.P.L. NO. _____
SOURCE: _____
COUNT TIME _____ MIN SOURCE SER. NO. _____
H. V. SETTING _____ BKG CPM _____

RUN NO.	n*	n - \bar{n}	(n - \bar{n}) ²
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
TOTAL (Σ)			

$\bar{N} = \frac{\Sigma n}{20}$
 $\Sigma (n - \bar{n})$ must be zero

$\sigma = \pm \sqrt{\bar{n}} =$ _____
 $2\sigma =$ _____
 $3\sigma =$ _____

$\bar{n} + 1\sigma =$ _____
 $\bar{n} + 2\sigma =$ _____
 $\bar{n} + 3\sigma =$ _____

* NET COUNTS

χ^2 (Chi-Square) = $\frac{\Sigma (n - \bar{n})^2}{\bar{n}}$
 χ^2 must be between 7 & 35

COMPLETED BY:	DATE
---------------	------

$\bar{n} - 1\sigma =$ _____
 $\bar{n} - 2\sigma =$ _____
 $\bar{n} - 3\sigma =$ _____

PROCEDURE

PROCEDURE TITLE

PROCEDURE NUMBER

RESPONSIBLE SECTION

NON-SAFETY RELATED ()

HNP-9

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8147

Revision No. 21

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<u>BOC Arnold</u>	<u>1-25-83</u>	<u>W.H. Rogers</u>	<u>2-6-83</u>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST p 3 H. I. 2. change 80 to 40
H. I. 9 change 80 to 40 H. I. 2. Set mini pulser
to 80 mv. These changes are needed to properly set
the gain control of the instrument. Reverse B. & C.
to conform to HNP-9.

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve Jones
 PRB Secretary

83-38

PRB Number

2-22-83
 Date

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO HNP-8147
REVISION NO 2
PAGE NO 1 of 10

LUDLUM MICRO R METER/MODEL 12S

A. PURPOSE

To establish a standard technique for operation and calibration of the Model 12S Micro R meter.

B. REFERENCES

1. Ludlum Micro R Meter Tech Manual.
2. Mini Pulser Model MP-1, HNP-8116.

C. SAFETY

Observe radiation protection procedures.

D. TEST EQUIPMENT

1. Gamma Source (Cs 137 8 uCi)
2. Mini Pulser
3. Am 241-⁶ Check Source
4. Volt Meter

E. DESCRIPTION OF INSTRUMENT


The Model 12S Micro R Meter utilizes an internally mounted 1" x 1" Na (Tl) scintillation detector which offers optimum performance in counting low level gamma radiation.

1. Specifications

- a. The instrument uses two standard "D" cell batteries, battery life exceeds 100 hours when using standard "D" cell batteries.
- b. Linearity is plus or minus 5% full scale.
- c. High voltage can be varied from 400 to 1500 volts DC.
- d. Calibration stability is less than 5% variance to battery end point.
- e. Audio output consists of a built in unimorph speaker with an ON-OFF switch provided on the front panel.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO. HNP-8147
REVISION NO. 2
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- f. Counting ranges are derived from a 3 micro R/hr scale with four range multipliers of X 1000, X 100, X 10, and X 1.
- g. Detector consists of an RCA 6199, coupled to a 1" x 1" NaI(Tl) scintillator, mounted inside the instrument housing.

F. DESCRIPTION OF CONTROLS AND FUNCTIONS


1. Range multiplier selector switch is a six (6) position switch marked OFF, BAT, X 1000, X100, X10, X1. Turning the switch from OFF to BAT position provides the operator a battery check of the instrument. Moving the range selector switch to one of the range multiplier positions provides the operator with an overall range of 0 to 3000 micro R/hr. Multiply the scale reading by the multiplier for determining the actual scale reading.
2. Audio On-Off toggle switch in the ON position operates the speaker. The frequency of the clicks is relative to the rate of the incoming pulses. The audio speaker should be turned off when the instrument is not being used.
3. Fast-Slow toggle switch provides meter response. Selecting the "F" position provides 90% of full scale readings of the meter in 3 seconds. In the "S" position, 90% of full scale meter deflection takes 11 seconds. The "S" position should be used for slow response and damped meter deviation.
4. RES button when depressed provides a rapid means to drive the meter downscale to zero.
5. Range calibration adjustments are recessed potentiometers located on line with each multiplier position. The adjustments control allow individual calibration for each range.
6. Gain adjustment allows the input sensitivity to be adjusted 20 to 100 mvolts. Normal gain is set at 40 mvolts.

G. OPERATING

1. Observe calibration sticker and ensure the meter has a current calibration, if not, do not use the meter. Tag it out with a To Shop tag.
2. Turn the selector switch to BAT position and ensure the meter pointer indicates in the OK BAT position. If not, tag it out.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

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REVISION NO. 2
PAGE NO. 3 of 10

3. Turn instrument range switch to X 1000. Expose the detector to a check source. Ensure the instruments reads 1500 to 2500 ur/hr with an 8 uCi Cs 137 check source and record information on Data Package 1 (Data Sheet 1).
4. When performing a survey, the response switch should be placed in the "S" position.
5. When surveying with the meter, place the instrument bottom close (1") to the material being surveyed and survey slowly.

H. CALIBRATION

NOTE

Calibration is yearly.


1. Pulsing
 - a. Remove old calibration sticker.
 - b. Turn range selector switch to BAT and ensure pointer is in the BAT OK region. If not, replace batteries.
 - c. Turn down the high voltage to zero.
 - d. Set the Mini Pulser to 40 Mv.
 - e. Connect Mini Pulser to instrument and turn on Micro R Meter to the X 1000 scale.
 - f. Turn on Mini Pulser to 400 k cpm.
 - g. Adjust gain control so instrument starts pulsing at 40 Mv.
 - h. Lock gain control.
 - i. Set the Mini Pulser to 80 Mv.
 - j. Adjust Mini Pulser to 400,000 cpm.

NOTE

400,000 cpm	=	2,220	ur/hr
40,000 cpm	=	220	ur/hr
400 cpm	=	22	ur/hr
40 cpm	=	2.2	ur/hr

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DATE
See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO. HNP-31-7
REVISION NO. 2
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- k. Observe meter reading. Meter should read 2.220 μ r/hr. If not, adjust X 1000 range on Micro R Meter.
- l. Repeat the above, decreasing the pulser by a factor of 10 each time. Record information on Data Package 2 (Data Sheet 2).

2. High Voltage Adjustment

- a. Connect electrostatic volt meter to the Micro R Meter.
- b. Adjust voltage up to 500 volts.
- c. Observe Micro R Meter reading, record bkg readings.
- d. Adjust voltage up in steps of 50 volts until 1000 volts is obtained.
- e. Decrease voltage back to 500 volts.
- f. Attach Am 241-⁶ source to the end of the detector.
- g. Observe Micro R Meter readings and record source count rate.
- h. Repeat Step f. above until 1000 volts are obtained. Bring voltage up in steps of 50 volts.
- i. Place instrument back into the can.
- j. Plot background and source count rate vs. high voltage on Data Package 3 (Data Sheet 3). Determine optimum High Voltage and record on Data Packages 2 and 3 (Data Sheets 2 and 3).
- k. Place an 8 μ Ci Cs 137 check source to the bottom of the instrument and record dose rate. Should be between 1500 and 2500 mr/hr. Record on Data Package 3 (Data Sheet 3).
- l. Notify foreman of completion of procedure for review and approval.
- m. Plot graph.
- n. Replace calibration sticker stating next yearly calibration.
- o. If instrument can't be calibrated, return to vendor for repair.

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E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8147
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PAGE NO	5 of 10

PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8147-1

SERIAL NO: R02-

MPL NO: _____

RTYPE: G15.14

XREF: N/A

TOTAL SHEETS: 2

FREQUENCY: AS REQUIRED

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: _____

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8147
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DATA PACKAGE 1
DATA SHEET 1


INSTRUMENT SOURCE CHECK SHEET

INSTRUMENT SERIAL NO. _____

[illegible]

APPROVAL
See Title Page
DATE
See Title Page

E. I. HATCH NUCLEAR PLANT

Georgia Power 

PROCEDURE NO	HNP-8147
REVISION NO	2
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PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8147-2

SERIAL NO: R02-

MPL NO: _____

RTYPE: G15.14

XREF: N/A

TOTAL SHEETS: 2

FREQUENCY: ANNUALLY

COMPLETED BY: _____

DATE COMPLETED: _____

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

ACCEPTABLE _____ UNACCEPTABLE _____

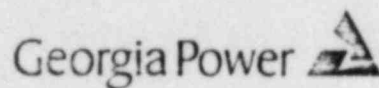
REVIEWED BY: _____

DATE REVIEWED: _____

REMARKS: _____

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E. I. HATCH NUCLEAR PLANT



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DATA PACKAGE 2
DATA SHEET 2

PULSER CALIBRATION FOR MICRO R METER

MICRO R METER SN _____ MICRO R METER MPL 021-N _____

PULSER SETTING	SHOULD READ	AS FOUND	AS LEFT	ur/hr TOLERANCE
RANGE				
4000 cpm				
X 1000	2.220 ur/hr			1776 to 2664
X 100	220 ur/hr			176 to 264
X 10	22 ur/hr			17.6 to 26.4
X 1	2.2 ur/hr			1.76 to 2.64
ADJUSTMENTS?				

Eight uCi Cs 137 source reading _____ ur/hr

*Gain Control Setting _____ Mv


**High Voltage Setting _____

* Should be 80 Mv
**After Adjustment

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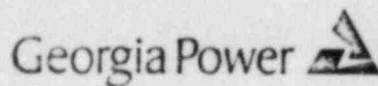
PROCEDURE DATA PACKAGE	
DOCUMENT NO:	HNP-8147-3
SERIAL NO:	R02-
MPL NO:	
RTYPE:	G15.14
XREF:	N/A
TOTAL SHEETS:	2
FREQUENCY:	ANNUALLY
COMPLETED BY:	
DATE COMPLETED:	
<p>I HAVE REVIEWED THIS DATA PACKAGE FOR COMPLETENESS AND AGAINST ACCEPTANCE CRITERIA IN ACCORDANCE WITH HNP-830.</p> <p>ACCEPTABLE _____ UNACCEPTABLE _____</p> <p>REVIEWED BY: _____</p> <p>DATE REVIEWED: _____</p> <p>REMARKS: _____</p> <p>_____</p> <p>_____</p> <p>_____</p>	

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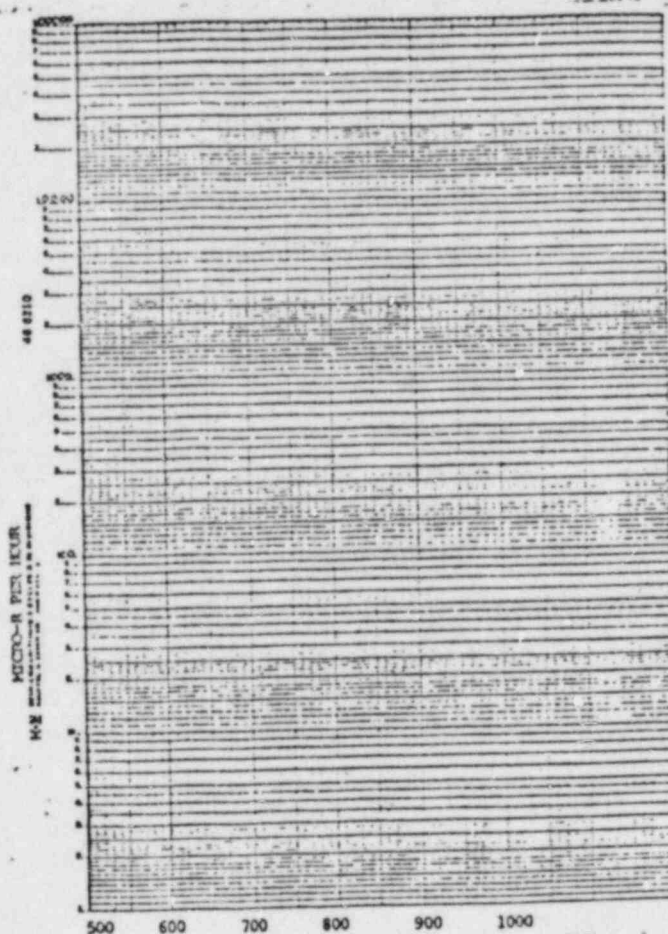
E. I. HATCH NUCLEAR PLANT



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DATA PACKAGE 3 DATA SHEET 3 BACKGROUND AND SOURCE COUNTS VS. VOLTAGE

MODEL: Ludlum Micro R Meter SERIAL NO. _____ DATE: _____
 Mini Pulser MPL No.: _____ 400,000 cpm = 2220 urem/hr
 Electrostatic Volt Meter MPL # _____ 40,000 cpm = 220 urem/hr
 Voltage Setting _____ 4,000 cpm = 22 urem/hr
 400 cpm = 2.2 urem/hr



COMPLETED BY	DATE

PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 8149

Revision No. 21

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name:	Date:	Signature:	Date:
<u>RC Arnold</u>	<u>1-18-82</u>	<u>W H Aizen</u>	<u>2-6-83</u>

REVISION CHANGES MODE OF OPERATION OR INTENT AS DESCRIBED IN FSAR:
☐ Yes ☒ No

CHANGE INVOLVES:

☐ An unreviewed Safety Question ☐ Tech. Specs. ☒ Neither
 (See back for Safety Evaluation if required).

Safety Related ☒ Non-Safety Related ☐

Safety/Non-safety Status Change ☐ Yes ☒ No

Attach marked up copy of procedure to this form.

REASON FOR REQUEST p2 H. 1. correct spelling of CAGE
p5 Fig 1 Adding of resistance loads in calibration source
column; MU-2, MU-1. Data Package Addition of resistance
loads in calibration source column.

PRB RECOMMENDS APPROVAL: ☒ Yes ☐ No

Steve Jim
 PRB Secretary

83-38

PRB Number

2-22-83
 Date

HNP-3

MANUAL SET

SAFETY EVALUATION

The revision of this procedure does not constitute an unreviewed safety question as explained below.


1. The probability of occurrence and the consequences of an accident or malfunction of equipment important to safety are not increased above those analyzed in the FSAR due to these changes because the revision does not change the purpose or performance of the system.

2. The possibility of an accident or malfunction of a different type than analyzed in the FSAR does not result from this change because the system responds and is operated as before the change.

3. The margin of safety as defined in the Technical Specifications is not reduced due to this revision because the revision does not change any limited safety system settings which would allow a safety limit to be exceeded or to allow a limiting condition for operations to be exceeded as stated in Technical Specifications.

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REVISION NO. 2
PAGE NO. 1 of 5

HIGH RANGE SURVEY METER EXTENDED CHAMBER CUTIE PIE MODEL CP-TP-SB OPERATION AND CALIBRATION

A. Purpose

To establish standard operation guides and calibration technique of the High Range Survey Meter Model CP-TP-SB.

B. Safety

Observe radiation protection procedures.

C. Reference

1. High Range Survey meter Model TP-CP-SB Technical Manual
2. Gamma Calibrator Procedure HNP-8115

D. Test Equipment

1. Gamma Calibrator
2. Resistance Loads mu-1 and mu-2

E. Description of Instrument

Survey meter, Model CP-TP-SB, is a portable battery operated instrument which uses an ionization chamber for measuring the intensity of gamma radiation in the range 0.1 R/HR to 5000 R/HR. The instrument consists of an ionization chamber, a totally solid state circuit and an indicating meter calibrated directly in R/HR. The Cutie Pie electronics are in the self-contained housing of hard chrome plated aluminum which can be easily decontaminated if necessary. The probe consists of a 1-3/16" diameter x 5-1/2" long aluminum ion chamber which can be close coupled to the electronics or put on the end of a 44" long extender pole. Also, it can be attached to the connector block at the end of the pole in an end-on position, or a 90 angle.

F. Description of Controls


1. External controls

Switch Turns instrument OFF, SET (zero), X1000, X100, X10, X1, BA button (Battery check), Zero Knob

2. Internal Controls (Calibration)

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- a. Cal X1 Calibrate 0-5 R/HR Range
- b. Cal X10 Calibrate 0-50 R/HR Range
- c. Cal X100 Calibrate 0-500 R/HR Range
- d. Cal X1000 Calibrate 0-5000 R/HR Range

G. Operation of Instrument

1. Turn the selector switch to the SET position and wait 15 seconds to "Warm Up." Adjust the zero knob to read 0 on the instrument scale.
2. Depress BA Switch to check the batteries.
3. Turn the Selector Switch to the X-1 position. If the meter reads off scale the radiation present is greater than 5 R/HR and the switch should be turned to the appropriate higher scale. The instrument is now ready to read gamma radiation intensities.
4. Instrument should be returned to the SET position occasionally during the first 30 minutes of operation and zero reset by turning the external zero control if needed, then waiting 15 seconds before turning the instrument again to any operating range. After 30 minutes, there should be no significant zero drift.

H. Calibration of Instrument

1. Internal Adjustments


NOTES

Calibration. There are four internal calibration controls; one for each range. These controls are accessible through holes in rear of the case by removing the cover plugs. These controls should not be changed unless there is a calibrated gamma source available for accurate recalibration. The proper procedure for calibrating the CP-TP-SB is as follows:

- a. Turn the instrument to SET and allow at least 15 seconds to warm up.
- b. Depress the BA button and check the battery strength. If not in the shaded region, install a new battery and return to Step 1 above.
- c. Place the instrument in a radiation field of 4 R/HR and turn the switch to the X1 position.

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- d. Remove the cover plug labeled Cal X1 on the rear of the case and adjust the internal control until the meter reads 4 R/HR. Record the reading prior to adjustment in the AS FOUND column of Data Package 1 (Data Sheet 1) and the reading following adjustment in the AS LEFT column of the Data Package 1 (Data Sheet 1).
- e. Place the instrument in a radiation field of 1 R/HR and check the meter reading. Accuracy of calibration should be such that indications on the meter will not be lower or higher by more than 20% of full scale.
- f. Repeat the above two steps, adjusting reading at top of scale on each range and checking near the bottom of each range to see that the instrument tracks well on the X1 and X10 scales.
- g. Due to the limits of the gamma calibrator the X100 and X1000 scales must be calibrated using resistance loads which will provide readings of 350 R/HR on the X100 (μ -2) and 2800 R/HR on the X1000 (μ -1) scales. Hook up each resistance load for their respective scales, record the readings in the AS FOUND column. If the readings are not within $\pm 20\%$ adjust the corresponding pot to achieve the proper readings and record them in the AS LEFT column.
- h. It should be noted that some zero drift may occur during the first 30 minutes of operation. Therefore, for accurate readings during this period occasional zero setting should be performed by turning the instrument to set and adjusting the external control knob, if necessary, to reestablish the zero and, of course, waiting 15 seconds before turning back to the radiation measuring ranges.


2. Coarse Zero Adjustment

If the external zero control will not zero the meter, an internal coarse zero adjustment is available through a hole in the bottom of the case. This control should be adjusted in the following manner:

- a. Turn the selector switch to the SET position.
- b. Turn the external zero control to approximately 3/4 of a revolution from the extreme counter-clockwise position.
- c. Adjust the internal coarse zero adjustment until the meter reads zero.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

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PROCEDURE DATA PACKAGE

DOCUMENT NO: HNP-8149

SERIAL NO: R02-

MPL NO: _____

RTYPE: G15.14

XREF: NA

TOTAL SHEETS: 2

FREQUENCY: Semi Annual

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: _____

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DATA PACKAGE
(DATA SHEET 1)

INSTRUMENT CALIBRATION DATA SHEET

[illegible]