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PROCEDURE REVISION REQUEST

PROCEDURE NO. HNP- 4851

Revision No. 21

REQUESTED BY		DEPARTMENT HEAD APPROVAL	
Name	Date	Signature	Date
<i>W. A. Penney</i>	<i>6/23/82</i>	<i>[Signature]</i>	<i>7/1/82</i>
		<i>[Signature]</i>	<i>6/24/82</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 Clarify section E. Alert Emergency. Item 11 THAT  
Equation unknowns are QNs & QNv for Main Stack and  
Sum of vents. Qs & Qv are now edited as  
above points per HNP-4850. Page 2 section E1

PRB RECOMMENDS APPROVAL: (  ) Yes ( ) No

*[Signature]*  
PRB Secretary

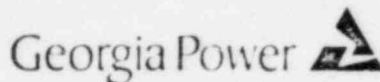
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EMERGENCY CLASSIFICATION DETERMINATION BASED ON EFFLUENT MONITORS

NOTE

This procedure supercedes HNP-4608 Revision 7.

A. PURPOSE

To describe a method for determining the Emergency Class using gaseous effluent monitors when releases are being made.

B. EMERGENCY CLASS RELEASE LIMITS

1. Alert Emergency: Gaseous releases are greater than 10 times Tech Spec Limits Section 2.1.3.a.
2. Site Area Emergency: Gaseous effluent monitors detect levels corresponding to greater than 50 mr/hr for 1/2 hour or greater than 500 mr/hr W.B. for two minutes (or five times these levels for thyroid) at the site boundary for adverse meteorology.
3. General Emergency: Effluent monitors detect levels corresponding to 1 rem/hr W.B. or 5 rem/hr thyroid at the site boundary under actual meteorological conditions.

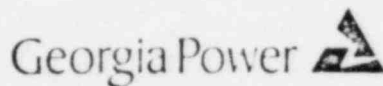
C. REFERENCES

1. HNP-4621
2. HNP-4721
3. HNP-4850
4. Emergency Plan Section D.

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D. RELEASE RATES

Determine release in curies/sec for each release point using procedure HNP-4850.

1. Main Stack (GNs) = \_\_\_\_\_ Ci/sec
  2. Reactor Building Vent Unit 1 (GNv1) = \_\_\_\_\_ Ci/sec
  - Reactor Building Vent Unit 2 (GNv2) = \_\_\_\_\_ Ci/sec
  - Recombiner Building Vent Unit 1 (GNv3) = \_\_\_\_\_ Ci/sec  
(if no alarm enter zero)
- Sum of Vents (GNv) = \_\_\_\_\_ Ci/sec

E. ALERT EMERGENCY

Declare alert emergency if either of the following two equations are satisfied instantaneously.

$$1.703 \text{ GNs} + 23.815 \text{ GNv} \text{ Greater than } 10$$

$$1.703 ( \quad ) + 23.815 ( \quad ) = \underline{\hspace{2cm}}$$

$$( \quad ) + ( \quad ) = \underline{\hspace{2cm}}$$

or

$$1.0 \times 10^2 \text{ GNs} + 1.5 \times 10^3 \text{ GNv} \text{ Greater than } 10$$

$$1.0 \times 10^2 ( \quad ) + 1.5 \times 10^3 ( \quad ) = \underline{\hspace{2cm}}$$

F. SITE AREA EMERGENCY

Declare Site Area Emergency if the following two equations are satisfied for time period.

1.  $\frac{\text{GNs}}{0.9} + \frac{\text{GNv}}{1.2 \text{ E-}2}$  Greater than 1 for longer than 30 minutes

$$\frac{( \quad )}{0.9} + \frac{( \quad )}{1.2 \text{ E-}2} = \underline{\hspace{2cm}}$$

2.  $\frac{\text{GNs}}{9.4} + \frac{\text{GNv}}{1.2 \text{ E-}1}$  Greater than 1 for longer than 2 minutes

$$\frac{( \quad )}{9.4} + \frac{( \quad )}{1.2 \text{ E-}1} = \underline{\hspace{2cm}}$$

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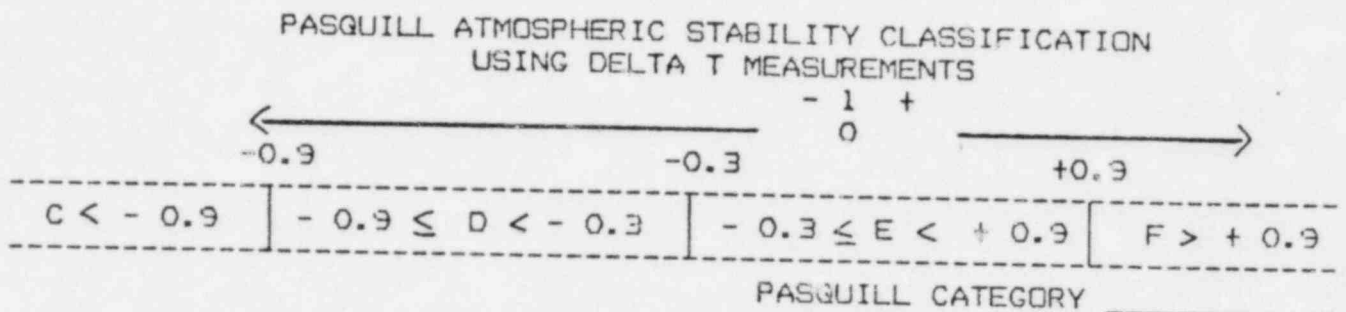
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G. GENERAL EMERGENCY

1. Check air temperature difference (Delta T) recorder and wind direction recorder readings (W.D. recorder indicates which direction the wind is coming from. Delta T = \_\_\_\_\_ °F.  
W.D. = \_\_\_\_\_ °
2. Based on Delta T, apply applicable Pasquill Category in Chart 1

CHART 1



3. Determine average wind speeds for periods of release intervals from recorder P62-R900 (H11-P658). Use the 150 foot elevation wind speed recording.

150 Foot level average wind speed  $\bar{U}_{150}$  = \_\_\_\_\_ (uncorr.)

4. Correct indicated wind speed to determine speed at top of main stack. Use table 2.

$\bar{U}_s = (\bar{U}_{150}) \times$  \_\_\_\_\_  $(\bar{U}_s) =$  \_\_\_\_\_ mi/hr

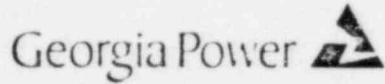
TABLE 2  
RATIO OF WIND SPEED AT MAIN STACK HEIGHT TO  
WIND SPEED AT MEASURED HEIGHT

<u>PASQUILL CATEGORY</u>	<u>RATIO</u>
C	1.13
D	1.24
E	1.47
F	1.47

5. Using  $\bar{U}_s$ ,  $\bar{U}_{150}$ , Pasquill Category, and Tables 3, 4, 5, and 6, determine R/QNs, R/QNv, R/QIs, and R/QIV.

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6. Declare General Emergency if either of the following equations are satisfied.

a.  $(R/GNs)(GNs) + (R/GNv)(GNv) > 1$   
 $( \quad ) ( \quad ) + ( \quad ) ( \quad ) = \underline{\hspace{2cm}}$

b.  $(2 E-3) * ((R/QIs)(GNs) + (R/QIv)(GNv)) > 1$   
 $(2 E-3) * ( ( \quad ) ( \quad ) + ( \quad ) ( \quad ) ) = \underline{\hspace{2cm}}$

\* (2 E-3) assumes that Iodine/Noble Gas ratio is 0.001. If ratio is known, multiply (2 E-3) by the factor calculated below and use the results instead of (2 E-3) in the equation.

$$\text{Factor} = \left( \frac{\text{known ratio}}{.001} \right)$$

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TABLE 3

PASQUILL C

WIND SPEED Mi/HR	DOSE RATE PER RELEASE RATE REM-SEC Ci - HR			
	NOBLE GAS		IODINE	
	STACK R/Gns	VENT R/QNv	STACK R/QIs	VENT R/QIv
0	5.0 E - 2	2.3 E - 0	4.8 E + 1	2.3 E + 3
1	2.6 E - 2	1.3 E 0	2.65 E + 1	1.2 E + 3
2	1.45 E - 2	6.5 E - 1	1.42 E + 1	6.8 E + 2
3	9.3 E - 3	4.3 E - 1	9.2 E 0	4.4 E + 2
4	6.7 E - 3	3.2 E - 1	6.7 E 0	3.2 E + 2
5	5.3 E - 3	2.5 E - 1	5.4 E 0	2.5 E + 2
6	4.4 E - 3	2.1 E - 1	4.5 E 0	2.1 E + 2
7	3.7 E - 3	1.8 E - 1	3.8 E 0	1.8 E + 2
8	3.25 E - 3	1.55 E - 1	3.3 E 0	1.6 E + 2
9	2.85 E - 3	1.38 E - 1	2.95 E 0	1.4 E + 2
10	2.55 E - 3	1.24 E - 1	2.65 E 0	1.25 E + 2
11	2.3 E - 3	1.15 E - 1	2.4 E 0	1.15 E + 2
12	2.12 E - 3	1.02 E - 1	2.2 E 0	1.05 E + 2
13	1.98 E - 3	9.5 E - 2	2.0 E 0	9.6 E + 1
14	1.85 E - 3	8.8 E - 2	1.88 E 0	8.9 E + 1
15	1.75 E - 3	8.2 E - 2	1.75 E 0	8.3 E + 1
16	1.65 E - 3	7.7 E - 2	1.63 E 0	7.8 E + 1
17	1.55 E - 3	7.3 E - 2	1.54 E 0	7.4 E + 1
18	1.48 E - 3	6.9 E - 2	1.47 E 0	6.9 E + 1
19	1.39 E - 3	6.5 E - 2	1.39 E 0	6.6 E + 1
20	1.32 E - 3	6.2 E - 2	1.31 E 0	6.2 E + 1
21	1.26 E - 3	5.9 E - 2	1.25 E 0	6.0 E + 1
22	1.2 E - 3	5.8 E - 2	1.2 E 0	5.7 E + 1
23	1.15 E - 3	5.4 E - 2	1.16 E 0	5.4 E + 1
24	1.11 E - 3	5.2 E - 2	1.11 E 0	5.2 E + 1
25	1.07 E - 3	5.0 E - 2	1.07 E 0	5.0 E + 1
26	1.01 E - 3	4.8 E - 2	1.04 E 0	4.8 E + 1
27	9.8 E - 4	4.6 E - 2	1.01 E 0	4.7 E + 1
28	9.4 E - 4	4.5 E - 2	1.0 E 0	4.5 E + 1

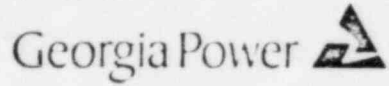
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TABLE 4  
PASQUILL D

WIND SPEED Mi/HR	DOSE RATE PER RELEASE RATE (REM SEC) Ci - HR			
	NOBLE GASES		IODINE	
	STACK R/QNs	VENT R/QNv	STACK R/QIs	VENT R/QIs
0	3.3 E - 2	2.8 E 0	2.4 E + 1	3.1 E + 3
1	1.4 E - 2	1.45 E 0	1.4 E + 1	1.6 E + 3
2	7.0 E - 3	8.6 E - 1	7.6 E 0	8.5 E + 2
3	4.7 E - 3	5.4 E - 1	4.8 E 0	5.4 E + 2
4	3.4 E - 3	3.95 E - 1	3.6 E 0	3.9 E + 2
5	2.75 E - 3	3.1 E - 1	2.85 E 0	3.1 E + 2
6	2.3 E - 3	2.55 E - 1	2.39 E 0	2.6 E + 2
7	1.9 E - 3	2.2 E - 1	2.05 E 0	2.2 E + 2
8	1.74 E - 3	1.9 E - 1	1.79 E 0	1.9 E + 2
9	1.55 E - 3	1.70 E - 1	1.58 E 0	1.7 E + 2
10	1.38 E - 3	1.50 E - 1	1.4 E 0	1.51 E + 2
11	1.25 E - 3	1.39 E - 1	1.28 E 0	1.49 E + 2
12	1.15 E - 3	1.28 E - 1	1.16 E 0	1.38 E + 2
13	1.05 E - 3	1.18 E - 1	1.08 E 0	1.28 E + 2
14	9.9 E - 4	1.10 E - 1	1.0 E 0	1.1 E + 2
15	9.3 E - 4	1.03 E - 1	9.3 E - 1	1.02 E + 2
16	8.8 E - 4	9.7 E - 2	8.7 E - 1	9.6 E + 1
17	8.2 E - 4	9.2 E - 2	8.2 E - 1	9.1 E + 1
18	7.8 E - 4	8.6 E - 2	7.8 E - 1	8.6 E + 1
19	7.4 E - 4	8.2 E - 2	7.4 E - 1	8.2 E + 1
20	7.0 E - 4	7.8 E - 2	7.0 E - 1	7.8 E + 1
21	6.5 E - 4	7.4 E - 2	6.7 E - 1	7.4 E + 1
22	6.4 E - 4	7.0 E - 2	6.4 E - 1	7.0 E + 1
23	6.1 E - 4	6.7 E - 2	6.1 E - 1	6.8 E + 1
24	5.7 E - 4	6.3 E - 2	5.8 E - 1	6.5 E + 1
25	5.6 E - 4	6.2 E - 2	5.6 E - 1	6.2 E + 1
26	5.3 E - 4	6.0 E - 2	5.4 E - 1	6.0 E + 1
27	5.1 E - 4	5.7 E - 2	5.2 E - 1	5.7 E + 1
28	4.9 E - 4	5.6 E - 2	5.0 E - 1	5.5 E + 1

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TABLE 5

## PASQUILL E

WIND SPEED Mi/HR	DOSE RATE PER RELEASE RATE (REM-SEC) Ci - HR			
	NOBLE GASES		IODINE	
	STACK R/GNs	VENT R/GNv	STACK R/GIs	VENT R/GIv
0	1.2 E - 2	3.2 E 0	1.45 E 1	3.2 E + 3
1	8.5 E - 3	1.75 E 0	8.6 E 0	1.85 E + 3
2	4.5 E - 3	1.0 E 0	4.7 E 0	1.0 E + 3
3	2.9 E - 3	6.4 E - 1	3.1 E 0	6.2 E + 2
4	2.15 E - 3	4.6 E - 1	2.2 E 0	4.6 E + 2
5	1.7 E - 3	3.65 E - 1	1.7 E 0	3.65 E + 2
6	1.41 E - 3	3.0 E - 1	1.44 E 0	3.0 E + 2
7	1.2 E - 3	2.55 E - 1	1.25 E 0	2.6 E + 2
8	1.05 E - 3	2.2 E - 1	1.08 E 0	2.25 E + 2
9	9.2 E - 4	1.98 E - 1	9.5 E - 1	2.0 E + 2
10	8.2 E - 4	1.79 E - 1	8.6 E - 1	1.8 E + 2
11	7.4 E - 4	1.61 E - 1	7.7 E - 1	1.65 E + 2
12	6.9 E - 4	1.49 E - 1	7.1 E - 1	1.5 E + 2
13	6.4 E - 4	1.38 E - 1	6.6 E - 1	1.38 E + 2
14	6.0 E - 4	1.29 E - 1	6.1 E - 1	1.29 E + 2
15	5.6 E - 4	1.20 E - 1	5.6 E - 1	1.2 E + 2
16	5.3 E - 4	1.12 E - 1	5.4 E - 1	1.13 E + 2
17	5.0 E - 4	1.05 E - 1	5.0 E - 1	1.05 E + 2
18	4.7 E - 4	1.0 E - 1	4.8 E - 1	1.0 E + 2
19	4.5 E - 4	9.5 E - 2	4.5 E - 1	9.6 E + 1
20	4.3 E - 4	9.0 E - 2	4.3 E - 1	9.1 E + 1
21	4.1 E - 4	8.6 E - 2	4.1 E - 1	8.7 E + 1
22	3.9 E - 4	8.2 E - 2	3.9 E - 1	8.2 E + 1
23	3.7 E - 4	7.8 E - 2	3.8 E - 1	8.0 E + 1
24	3.6 E - 4	7.4 E - 2	3.6 E - 1	7.6 E + 1
25	3.4 E - 4	7.2 E - 2	3.45 E - 1	7.3 E + 1
26	3.3 E - 4	6.9 E - 2	3.3 E - 1	7.0 E + 1
27	3.2 E - 4	6.6 E - 2	3.2 E - 1	6.8 E + 1
28	3.05 E - 4	6.4 E - 2	3.1 E - 1	6.4 E + 1

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