

ID/13

Revision Description This revision
adds a procedure and
a worksheet for estimating
iodine release from
field measurements.

QEP
Chapter330-11 Rev. 1
330-S1 Rev. 1
ProcedureJ. Sirovay
Originator

Revision

This procedure is required to be implemented prior to June 9, 1983
because of expiration of Temporary Procedure 1811

DRAFT REVIEW

Tech. Staff Supervisor Date

Department Head Date

Originator 1 Jun 83 Date

FINAL APPROVAL

Tech. Staff Supervisor 1 June 83 DateTech. Staff Supervisor 6/2/83 DateAsst. Supt. Admin 6/2/83 Date

AUTHORIZATION

Station Superintendent 6/3/83 Effective Date

INSTRUCTIONS FOR REVISION INSERTION

REMOVE

QEP 330-D Rev. 15

INSERT

QEP 330-D Rev. 16
(New) QEP 330-11 Rev. 1
(New) QEP 330-S1 Rev. 1

REVISION REQUEST FORM

Please sign and date below, and return this form to the Officer Supervisor -
Quad Office Station. Your Station Procedure log number is 47

Signature

Date

8307120068 830624
PDR ADOCK 05000254
F PDR

-1-(final)

X005
0/3

ID/10,1P

ASSESSMENT ACTIONS

<u>330-0</u> Assessment Actions	Rev. 16	06-03-83
<u>330-1</u> Abnormal Personnel Exposure	Rev. 3	08-10-81
<u>330-2</u> Accidental Release of Radioactivity Within the Site Boundary	Rev. 2	02-22-81
<u>330-3</u> SPING Control Terminal Operation	Rev. 4	09-23-82
<u>330-4</u> Estimation of Off-Site Dose from an Unplanned Release of Radioactive Effluents	Rev. 1	12-17-80
<u>330-5</u> Estimating High Activity Releases during Accident Conditions	Rev. 1	12-17-80
<u>330-6</u> Air Sampling Under Accident Conditions	Rev. 3	10-18-82
<u>330-7</u> In-Plant Iodine-131 Measurement During Post-Accident Conditions	Rev. 5	10-18-82
<u>330-8</u> Handling and Analysis of Post Accident Reactor Coolant Samples	Rev. 5	10-18-82
<u>330-9</u> Estimating Plant Release Using the Stack Gas Monitors	Rev. 1	12-17-80
<u>330-10</u> On-Site Environmental Sampling During Emergency Situations	Rev. 2	10-18-82
<u>330-11</u> Estimation of I-131 Release by Field Team Measurements	Rev. 1	06-03-83
<u>330-S1</u> Iodine Concentration Worksheet	Rev. 1	06-03-83
<u>330-T1</u> Quad-Cities Station Environs Monitoring-Dairy Farms	Rev. 1	06-20-80

APPROVED

JUN 03 1983

C.C.C.S.R.

<u>330-T2</u> Dose Factors for Gaseous Releases	Rev. 2	03-10-82
<u>330-T3</u> Dose Factors for Liquid Releases	Rev. 1	12-17-80
<u>330-T4</u> Main Chimney Release Rate Table	Rev. 1	12-17-80
<u>330-T5</u> Typical Gas Stack Monitor Calibration Curve	Rev. 1	12-17-80
<u>330-T6</u> Sample Cave	Rev. 1	05-18-81
<u>330-T7</u> Sample Dilution Equipment	Rev. 1	05-18-81
<u>330-T8</u> On-Site Environmental Sampling Locations	Rev. 1	06-01-82
<u>330-T9</u> Area Radiation Monitor System	Rev. 1	10-18-82

ESTIMATION OF I-131 RELEASE
BY FIELD TEAM MEASUREMENTS

QEP 330-11
Revision 1
May 1983

ID/1H

A. PURPOSE

The purpose of this procedure is to make a quick estimate of iodine releases from field team measurements.

B. REFERENCES

1. None.

C. PREREQUISITES

1. Plastic bags.
2. Air sampler.
3. Charcoal or Silver Zeolite cartridges.
4. Pulse rate meter with HP 210 probe.
5. Labels.

D. PRECAUTIONS

1. To prevent contamination of the probe all samples should be placed in a plastic bag prior to counting.
2. Count sample cartridges with the sample inlet side towards the detector.

E. LIMITATIONS AND ACTIONS

1. Minimize the amount of non-iodine activity in the sample by using silver zeolite cartridges if possible.
2. If background activity is high, shield the sample or transport it to a lower background area for counting.
3. Counting geometry for this procedure is with the sample cartridge setting on a firm surface (in a plastic bag) with the flow inlet side facing up and placing the HP 210 detector probe on the cartridge. This should be done in a shielded sample holder if one is available.

F. PROCEDURE

1. Obtain the air sample from the desired location in accordance with station or environs group procedures.
2. Identify the sample inlet or note the direction of flow through the sample cartridge.

3. Place the sample in a small plastic bag and label with the following information:

Sample location _____
 Sampled by _____
 Time on _____ Flow on _____
 Time off _____ Flow off _____

4. Count the cartridge with the sample inlet side facing the detector. Be sure to wait a sufficient amount of time for the count rate to stabilize.

NOTE

Samples are to be counted in as low as a background area as possible.

5. Remove the sample cartridge and determine a background count rate. Be sure to wait a sufficient amount of time for the count rate to stabilize.
6. Determine the net count rate by subtracting the background count rate from step F.5. from the sample count rate in step F.4.
7. Determine the sample volume using the following method:

$$(\text{rate}) (\text{time}) (2.832 \text{ E4 ml/ft}^3) = \text{_____ ml}$$

where rate = average sample flow rate in ft³/min
 time = time during sampling in min.
 2.832 E4 = conversion factor

8. Determine the Iodine-131 concentration from the following method:

$$(\text{cpm}) \left(\frac{\text{dpm}}{1.8\text{E}-2 \text{ cpm}} \right) \left(\frac{\mu\text{Ci}}{2.22\text{E}6 \text{ dpm}} \right) \left(\frac{1}{\text{ml}} \right) = \text{_____ } \frac{\mu\text{Ci}}{\text{ml}}$$

when cpm = net count rate from step F.6.
 dpm/1.8E-2 cpm = efficiency factor
 $\mu\text{Ci}/2.22\text{E}6 \text{ dpm}$ = conversion factor
 ml = sample volume from step F.7.

9. Report the results of the analysis to Radiation/Chemistry Supervision.
10. Save the sample for further analysis.

G. CHECKLISTS

1. QEP 330-S1, Iodine Concentration Worksheet.

H. TECHNICAL SPECIFICATION REFERENCES

1. None.

ID/1J

IODINE CONCENTRATION WORKSHEET

QEP 330-S1
Revision 1
May 1983

Sample location _____ Sample Date _____
 Sampled by _____
 Time on _____ Flow on _____
 Time off _____ Flow off _____

Sample count rate _____ cpm
 Background count rate _____ cpm
 Net count rate _____ cpm

Volume of Sample

(rate) (time) (2.832 E4 ml/ft³) = _____ ml

where rate = average sample flow rate in ft³/min

time = time during sampling in min.

2.832 E4 = conversion factor

_____ X _____ X 2.832E4 ml/ft³ = _____ ml

Iodine-131 Concentration

(cpm) $\left(\frac{\text{dpm}}{1.8\text{E}-2 \text{ cpm}}\right) \left(\frac{\mu\text{Ci}}{2.22\text{E}6 \text{ dpm}}\right) \left(\frac{1}{\text{ml}}\right) = \frac{\mu\text{Ci}}{\text{ml}}$

where cpm = net count rate from step F.6.

dpm/1.8E-2 cpm = efficiency factor

$\mu\text{Ci}/2.22\text{E}6 \text{ dpm}$ = conversion factor

ml = sample volume

REVIEWED BY _____ DATE _____