

ENTERGY OPERATIONS INCORPORATED

ARKANSAS NUCLEAR ONE

Arkansas Nuclear One
Russellville, Arkansas
Date: 950508

MEMORANDUM

TO: 103
CC - NRC - WASHINGTON

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FROM: DOCUMENT CONTROL
Ref Key: 19428

SUBJECT: PLANT MANUAL UPDATE: NEW REVISION TO PROCEDURE

PROCEDURE/FORM NUMBER: OP-1905.031

REV. # 4 TC # 0 PC # 0

PROCEDURE/FORM TITLE: AIRBORNE IODINE DETERMINATION

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PROCEDURE(S)

PAGE(S)

SIGNATURE: _____ DATE: _____
UPDATED

PRINT NAME _____

form title: TRANSMITTAL (PROCEDURE/WORK PLANS/CHANGES/FORMS) | form no. 1013.002H | rev. _____

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**ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE**

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TITLE: AIRBORNE IODINE-131 DETERMINATION USING
AN RM-14/HP-210

PROC/WORK PLAN NO.
1905.031

REV.
4

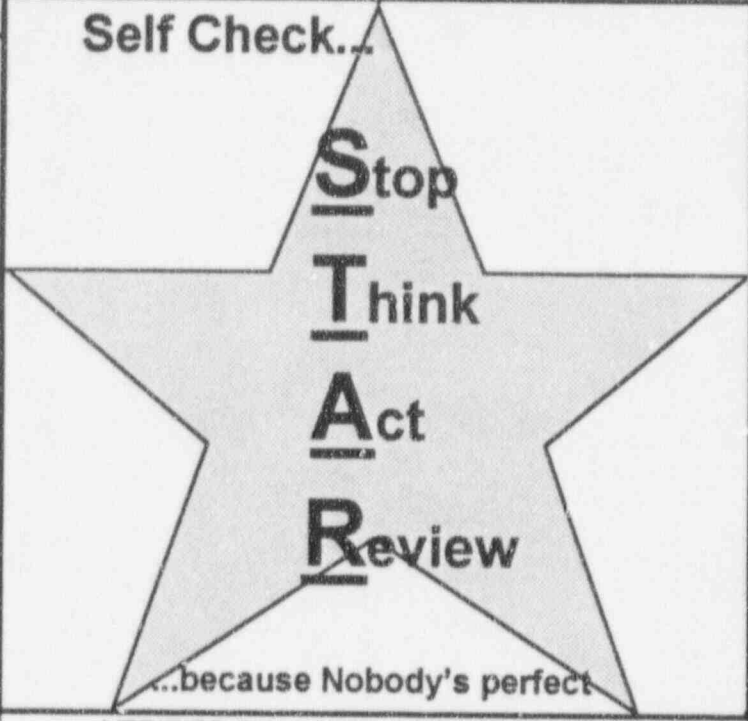
EXP. DATE
N/A

SAFETY-RELATED
☒ YES ☐ NO

CONTROLLED COPY # 103

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IPTE ☐ YES
☒ NO

PAGE	CHG	PAGE	CHG		PAGE	CHG	PAGE	CHG
1				<p align="center">Self Check...</p>  <p align="center">...because Nobody's perfect</p>				
2								
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				<p>VERIFIED BY _____ DATE _____ TIME _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>				

APPROVAL AUTHORITY:

Asher R. Cotton

APPROVAL DATE:

5/5/95

REQUIRED EFFECTIVE DATE:

FORM TITLE:

LIST OF AFFECTED PAGES

FORM NO.
1000.006A

REV.
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PROC./WORK PLAN NO. 1905.031	PROCEDURE/WORK PLAN TITLE: AIRBORNE IODINE - 131 DETERMINATION USING AN RM-14/HP-210	PAGE: 1 of 4 REV: 4 CHANGE:
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1.0 PURPOSE

Provide instructions on the use of the RM-14/HP-210 for determining Radioiodine-131 airborne concentrations.

2.0 SCOPE

This procedure should be utilized for Emergency Team monitoring or for situations in routine operations where a gross Iodine Concentration is needed.

3.0 REFERENCES

3.1 REFERENCES USED IN PREPARATION OF THIS PROCEDURE

None

3.2 REFERENCES USED IN IMPLEMENTATION OF THIS PROCEDURE

3.2.1 1601.402, "Operation of Portable Air Samplers"

3.2.2 1601.400, "Response Check and Operation of Portable Survey Meters"

3.2.3 1905.002, "Offsite Emergency Monitoring"

3.3 RELATED AND PROCEDURES

3.3.1 1012.018, "Administration of Radiological Surveys"

3.3.2 1301.010, "Eberline Model RM-14 Calibration"

3.4 REGULATORY CORRESPONDENCE CONTAINING NRC COMMITMENTS WHICH ARE IMPLEMENTED IN THIS PROCEDURE:

3.4.1 None

4.0 DEFINITIONS

None

5.0 RESPONSIBILITIES

5.1 The Radiation Protection and Radwaste Manager is responsible for overall control and implementation of this procedure.

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6.0 PROCEDURE

6.1 IODINE-131 SAMPLE DETERMINATION

- 6.1.1 The iodine air sample shall be collected in accordance with 1601.402, "Operation of Portable Air Samplers".

CAUTION

THE VOLUME OF THE SAMPLE TAKEN SHALL BE AT LEAST 100 LITERS AND FOR EMERGENCY SITUATIONS ONLY SILVER ZEOLITE CARTRIDGES SHALL BE USED. THE OFFSITE MONITORING SUPERVISOR OR DOSE ASSESSMENT SUPERVISOR MAY AUTHORIZE AIR SAMPLES OF LESS THAN 100 LITERS IN ORDER TO MINIMIZE DOSE OR OTHER HAZARDS THAT MAY BE PRESENT.

- A. If the sample is taken during an emergency situation, record the data on Form 1905.031A.
- B. For non-emergency situations, record the air sample data on the Health Physics form applicable to the survey situation.

- 6.1.2 Turn the RM-14/HP-210 or HP-260 on and note the background count rate.
- 6.1.3 Hold the frisker probe approximately one-quarter inch from the surface of the silver zeolite cartridge with the air inlet side of the cartridge facing the probe.
- 6.1.4 Note the gross counts on the RM-14 and calculate the net counts by subtracting the background count rate.
- 6.1.5 Determine the I-131 activity (in μCi) by using the following equation:

$$\text{I-131 } (\mu\text{Ci}) = \text{net cpm} \times 8.0\text{E}^{-6}$$

CAUTION

IF A CHARCOAL CARTRIDGE HAS BEEN USED AS THE SAMPLING MEDIA, THIS CALCULATION WILL RESULT IN AN OVERESTIMATION OF THE I-131 ACTIVITY.

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- 6.1.6 Divide the activity (in μCi) by the total volume of the sample (in cc) to obtain the I-131 airborne concentration.
- 6.1.7 Record all data and calculations on Form 1905.031A, "I-131 Sample Data Form" for sampling performed during an emergency situation.
- 6.1.8 Place the silver zeolite cartridge in a plastic bag, seal and label the bag and return the bag to the Emergency Operations Facility for further analysis.
 - A. The label should contain the time of sample, the flow rate, total volume and location where sample was taken.

7.0 ATTACHMENTS AND FORMS

7.1 ATTACHMENTS

- 7.1.1 Attachment 1, Deleted

7.2 FORMS

- 7.2.1 Form 1905.031A, "I-131 Sample Data Form"

SAMPLE DATA

Field Team: _____

Date: _____

Air Sample ID #: _____

Sample Point: _____

Air Sampler #: _____

Cal. Due Date: _____

Time On: _____

Time Off: _____

Total Sample Time: _____ min.

Flow Rate: _____ lpm

Volume = Total Sample Time x Flow Rate x 10^3 = _____ cc

Sample Collected By: _____ Badge #: _____

COUNTING DATA

RM-14 #: _____ HP-210/260 #: _____ Cal Due Date: _____

_____ (Gross CPM) - _____ (Background CPM) = _____ Net CPM

I¹³¹ ACTIVITY DETERMINATION_____ (Net CPM) x 8.0×10^{-6} = _____ μCi **I¹³¹ CONCENTRATION DETERMINATION**I¹³¹ Conc. ($\mu\text{Ci/cc}$) = $\mu\text{Ci} \div \text{Volume} =$ _____ $\mu\text{Ci} \div$ _____ cc = _____ $\mu\text{Ci/cc}$ Performed by: _____ Badge #: _____
Offsite Monitoring TechnicianReviewed by: _____ Badge #: _____
Offsite Monitoring Supervisor

FORM TITLE:

I-131 EMERGENCY FIELD SAMPLE DATA

FORM NO.

1905.031A

REV.

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