

INDIANA & MICHIGAN POWER COMPANY  
DONALD C. COOK NUCLEAR PLANT

PLANT MANAGER PROCEDURE

Index

Identification Number	Title	Revision No. And Date	Comments
PMP 2031 EPP.001	Emergency Telephone Communications	Rev. 1 6-24-82	
EPP.002	Barring of the PABX	Revision 1 6-29-82	
EPP.003	Follow-Up Off-Site Communications	Revision 0 4-1-81	TP-1,4-30-82 Exp NA
EPP.004	Protective Action Guides (PAGs) and Protective Actions	Revision 0 4-1-81	
EPP.005	Personnel Evacuation	Revision 1 5-25-82	
EPP.006	Activation of the Reentry and Rescue Team	Revision 0 4-1-81	
EPP.007	Security Actions During Emergency Conditions	Revision 1 5-5-82	
EPP.008	Emergency Medical Plan Guidelines	Revision 0 4-1-81	
EPP.009	Health Physics Procedures	Revision 0 4-1-81	
EPP.010	Activation of Radiation Monitoring Teams	Revision 0 4-1-81	
EPP.011	On-Site Radiological Monitoring	Revision 0 4-1-81	
EPP.012	Off-Site Radiological Monitoring	Revision 1 9-8-82	
EPP.013	Environmental Monitoring and Analysis	Revision 0 4-1-81	TP-1,2-25-82 Exp N/A



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Identification Number	Title	Revision No. And Date	Comments
PMP 2081 EPP.025	Activation and Operation of the Emergency News Source (ENS) (An Emergency Operations Facility)	Revision 1 6-24-82	
EPP.026	Use of Stable Iodine for Thyroid Blocking During a Radiation Emergency	Revision 1 9-8-82	

**INDIANA & MICHIGAN**  
ELECTRIC COMPANY  
DONALD C. COOK NUCLEAR PLANT

**PROCEDURE COVER SHEET**

Procedure No. PMP 2081 EPP.012

Revision No. 1

**TITLE** OFF-SITE RADIOLOGICAL MONITORING

**SCOPE OF REVISION**

Revision 1 - Incorporate TP-1.

**SIGNATURES**

	ORIGINAL	Rev. 1	REV. 2	Rev. 3
PREPARED BY	<i>Steve W. [Signature]</i>	<i>[Signature]</i>		
QUALITY ASSURANCE REVIEW	<i>[Signature]</i>	<i>[Signature]</i>		
INTERFACING DEPARTMENT HEAD CONCURRENCE	N.A.	NA		
DEPARTMENT HEAD APPROVAL	N.A.	NA		
PLANT NUCLEAR SAFETY COMMITTEE	<i>[Signature]</i>	<i>E. J. Townley</i>		
PLANT MANAGER APPROVAL	<i>[Signature]</i>	<i>W. L. Smith</i>		
DATE OF ISSUE	3-31-81	9-8-82		

INDIANA & MICHIGAN ELECTRIC COMPANY  
DONALD C. COOK NUCLEAR PLANT

OFF-SITE RADIOLOGICAL MONITORING

1.0 OBJECTIVES

This procedure includes requirements for off-site radiation monitoring and data acquisition necessary for the TSC Plant Evaluation Team and RAD to verify the extent and nature of off-site gaseous releases per PMP 2081.EPP.014, Off-Site Dose Assessments, and to recommend protective actions to the public. This procedure does not address determination of radiological effects on the environment (contained in PMP 2081.EPP.013).

2.0 RESPONSIBILITIES

The Radiation Monitoring Team (RMT) are responsible to the Radiation Protection Director (RPD) / to:

- 2.1 Survey and record off-site radiological data at selected locations.
- 2.2 Report all survey results to the RPD.
- 2.3 Assist in surveys from helicopters (if necessary).
- 2.4 Recommend survey locations for continuous plume dispersion monitoring.

3.0 INSTRUCTIONS #OPTIONAL CHECKLIST ENTRIES PROVIDED

NOTE: INITIAL DOSE ESTIMATES MAY BE MADE BY VISUAL AIDS OR BY THE USE OF THE AEPSC COMPUTER PROGRAM CPM 002 OR MIDAS OR BY HAND AS PER PMP 2081.EPP.014. FIELD MEASUREMENTS ARE TO VERIFY AND/OR ESTABLISH CORRELATIONS.

NOTE: IF THE RMT IS TO USE A HELICOPTER, THEN PROCEED DIRECTLY TO STEP 3.6.

- #3.1 Receive briefing from the RPD or RAD on-site conditions and off-site locations to be monitored.

NOTE: USE EXHIBITS A, OFF-SITE SURVEY MAP; AND B, ESTABLISHED SURVEY POINTS, TO LOCATE THE SURVEY POINTS. ALSO, SEE PMP 2082.EPP.008, MAPS AND OVERLAYS.

- #3.2 When directed by the RAD to perform off-site radiological surveys, obtain a radio telephone, Radiation Protection Emergency Kit, and a 12 volt Air Sampler, (Mobile), while another RMT member locates and prepares the survey vehicle.

NOTE: KEYS FOR I&M VEHICLES ARE MAINTAINED IN THE OPERATIONS STAGING AREA EMERGENCY EQUIPMENT ROOM.

- #3.3 Perform an equipment and instrument check prior to leaving the site.

- 3.4 Establish communications with the TSC using the radio telephone and proceed to the survey points.

- 3.5 Ask the RPD if the points to be surveyed remain the same and document the changed instructions, on EXHIBIT C, RADIATION MONITORING TEAM MISSION DIRECTIVE.

- 3.6 If requested to assist in off-site agency surveys from a helicopter, proceed as follows:

- 3.6.1 Request a briefing on the helicopter landing location, estimated time of arrival, and on present plant conditions from the RPD.

- 3.6.2 Obtain a Radiation Protection Emergency Kit and a portable air sampler.

NOTE: THE OFF-SITE MONITORING KIT (MOBILE) CAN BE OBTAINED AT THE OSA EMERGENCY EQUIPMENT ROOM OR AS SPECIFIED IN PMP 2082.EPP.007.

- #3.6.3 Perform a quick equipment check prior to proceeding.

- 3.6.4 Meet the helicopter.

NOTE: RECORD ALL SURVEY INSTRUCTIONS AND LOCATIONS OF SURVEY POINTS (DISTANCE IN MILES FROM THE SITE AND ELEVATION, OR FEET ABOVE GROUND LEVEL) ON EXHIBIT C, RADIATION MONITORING TEAM MISSION DIRECTIVE.

- 3.7 Continuously monitor the general area. Record all survey data and results of the analyses on EXHIBITS D, DOSE RATE FORM; AND E, SAMPLE ENVELOPE DATA, as specified. Additional actions/comments can be entered on EXHIBIT D.
  - 3.7.1 Using equipment shielded against Beta radiation traverse the plume in the crosswind direction, determine the maximum mrem/h, and record that reading, time the reading was taken, and the location on EXHIBIT E.
  - 3.7.2 Place a particulate filter and a silver zeolite cartridge in the air sampler and collect a sample of 5 to 10 cubic feet volume at the location where the mrem/hr reading was the highest (found during the traverse).
  - 3.7.3 While collecting the sample, report the specific survey location and results of the gamma dose rate survey to the RPD.
  - 3.7.4 After collecting the air sample, record (on the sample container - EXHIBIT E) and place the silver zeolite cartridge and the particulate filter in separate sample envelopes and mark them for later identification.
  - 3.7.5 Contact the RPD (by radio) to locate a low background area to be used for counting and proceed to the area specified.
  - 3.7.6 Determine the activities per 12-THP 6010.RAD.517.

NOTE: USE CURVES IN KIT AS NECESSARY.
  - 3.7.7 Complete the information required on EXHIBIT E.
- 3.8 Perform additional surveys as follows:

NOTE: BASED ON FIELD DOSE RATE MEASUREMENTS, TAKE THE AIR SAMPLES STARTING AS NEAR TO THE CENTER OF THE PLUME AS POSSIBLE.

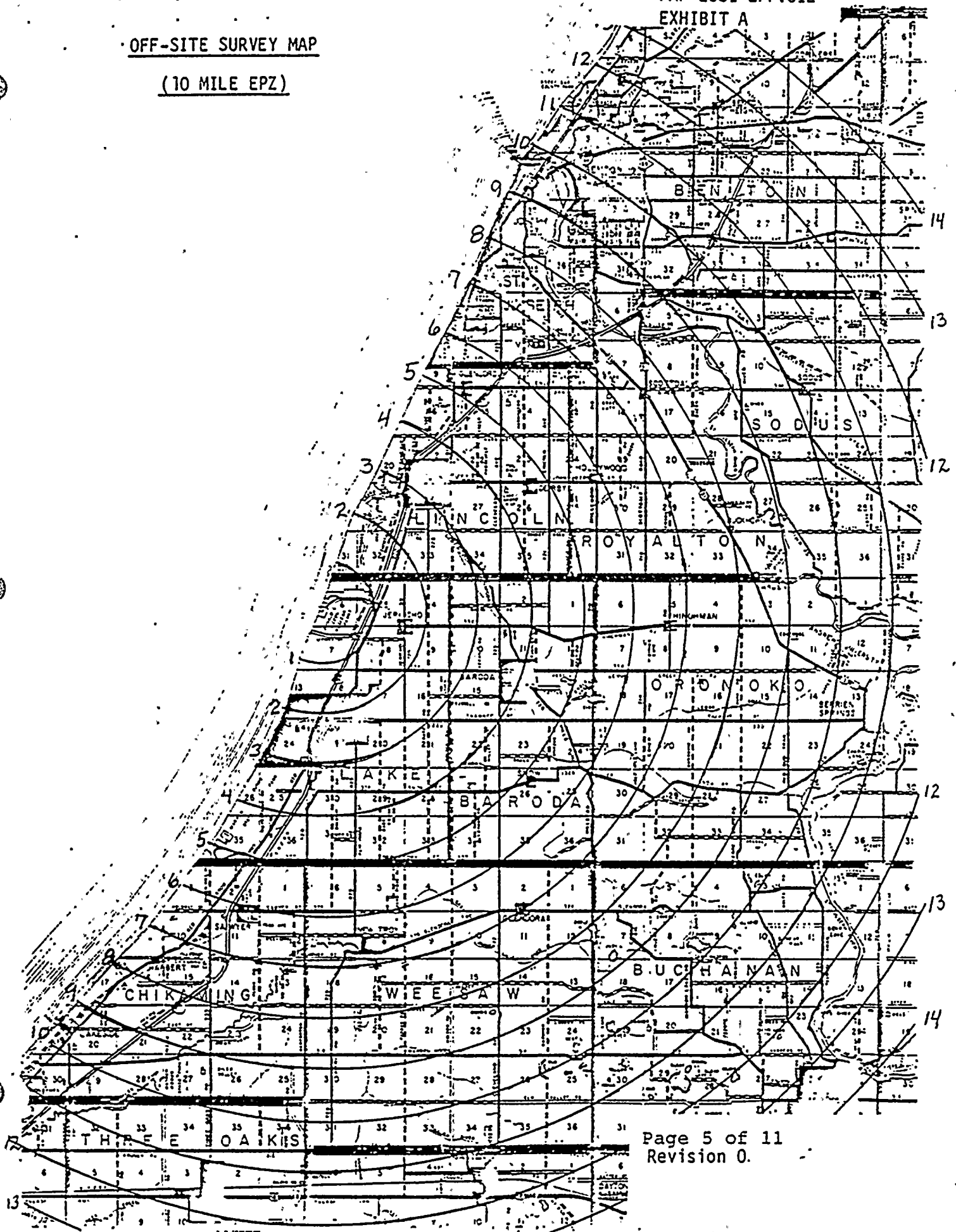
  - 3.8.1 Repeat Step 3.7 as directed by the RPD (3 or 4 passes across the plume would be optimum) and record data on EXHIBITS D, DOSE RATE FORM; and E, SAMPLE ENVELOPE DATA.

- 3.8.2 Compute the average dose rate for all passes made in or near the same location and record on EXHIBIT E.
- 3.8.3 Report the Average Dose Rate and specific location to RPD.
- #3.9 Assist in coordination and augmentation of the State and local effort, as directed by the RPD/RAD.
- 3.10 Request further instructions from the RPD/RAD.
- CAUTION: IF RELIEVED BY A NEW RMT MEMBER, FULLY BRIEF THE MEMBER ON THE STATUS OF THE SURVEYS.
- 3.11 Exhibit F is a Checklist for Off-Site Radiological Monitoring.



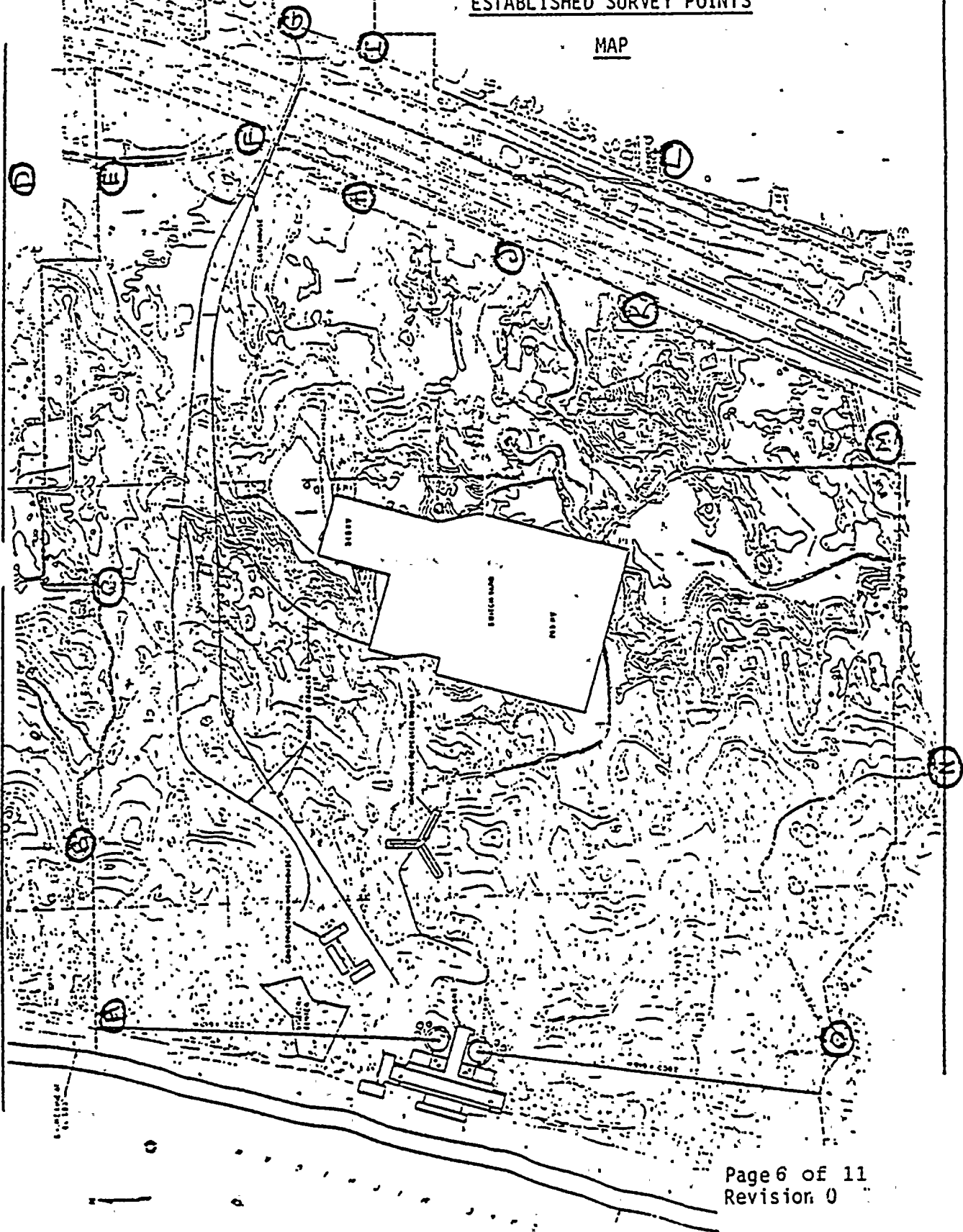
OFF-SITE SURVEY MAP

(10 MILE EPZ)



ESTABLISHED SURVEY POINTS

MAP



<u>LETTER</u>	<u>Mi</u>	<u>DISTANCE FROM PLANT IN FEET</u>	<u>Km</u>	<u>DESCRIPTION OF LOCATION</u>
A	.38	2,000	.61	Rosemary Beach House
B	.46	2,450	.75	Entrance Gate to Rosemary Beach House
C	.66	3,500	1.1	Entrance Gate to Rosemary Beach Area
D	1.13	6,000	1.82	Intersection of Willow Road and Thornton Road
E	1.08	5,700	1.74	Houses on Thornton Road
F	1.02	5,375	1.64	I-94 Guard House
G	1.17	6,200	1.89	Red Arrow Highway at Entrance to D.C. Cook Plant
H	.98	5,150	1.57	Under 345KV Lines on Thornton Road
I	1.12	5,900	1.80	Near 345KV Lines at Red Arrow Highway
J	.88	4,650	1.42	Back Gate at Thornton Road
K	.87	4,600	1.40	Under 745KV Lines on Thornton Road
L	.98	5,200	1.59	Near 745KV Lines at Red Arrow Highway
M	.80	4,250	1.30	Intersection of Livingston and Thornton Roads
N	.62	3,250	.99	Entrance Road to OS Station #5 at Livingston Road
O	.42	2,200	.67	Road from OS Station #5 at Livingston Road
P	.43	2,250	.69	Livingston Road at Beach

RADIATION MONITORING TEAM MISSION DIRECTIVE

TYPE MISSION: On-Site Off-Site Airborne Waterborne Sampling Monitoring

ASSIGNED TO TEAM LEADER: \_\_\_\_\_ TEAM MEMBERS: \_\_\_\_\_

DATE/TIME ASSIGNED: \_\_\_\_\_ / \_\_\_\_\_ AREA INVOLVED: \_\_\_\_\_  
Date Time

MISSION DETAILS: \_\_\_\_\_

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

RADIATION/DAMAGE CONDITIONS/ROUTE: \_\_\_\_\_

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

BRIEFING AND RECEIPT ACKNOWLEDGED \_\_\_\_\_  
Team Leader

TIME MISSION INITIATED: \_\_\_\_\_ TIME MISSION COMPLETED: \_\_\_\_\_

RESULTS OF MISSION (USE REFERENCES AS CONVENIENT): \_\_\_\_\_

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

DOSE RATE FORM

TERM DESIGNATION: \_\_\_\_\_

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

INSTRUMENT S/N \_\_\_\_\_

[illegible]

SAMPLE ENVELOPE DATA

RP Sample # \_\_\_\_\_ Lab ID # \_\_\_\_\_  
RWP # \_\_\_\_\_ UNIT: 1 2  
CAM # \_\_\_\_\_  
650' 633' 609' 587' 573'  
Other \_\_\_\_\_  
Start Time and Date \_\_\_\_\_  
Air Sample S/N \_\_\_\_\_  
Flow Rate: 20 CFM 60 LPM Other \_\_\_\_\_  
Flow Corr. Factor \_\_\_\_\_  
Samplers Name \_\_\_\_\_  
Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CHECKLIST FOR EPP.012

OFF-SITE RADIOLOGICAL MONITORING

3.1 Location(s): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Briefing Completed: \_\_\_\_\_  
Initials / Time

3.2 Obtained Required Equipment/Vehicle \_\_\_\_\_  
Initials / Time

3.3 or  
3.6.3 Instruments and Equipment Checked: \_\_\_\_\_  
Initials / Time

3.9 State & Local Agencies Assisted: \_\_\_\_\_  
Initials / Time

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**INDIANA & MICHIGAN**  
**ELECTRIC COMPANY**  
**DONALD C. COOK NUCLEAR PLANT**

**PROCEDURE COVER SHEET**

Procedure No. PMP 2081 EPP.026

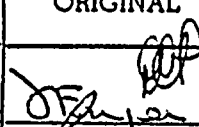
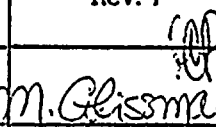
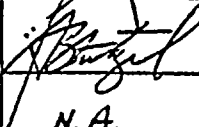
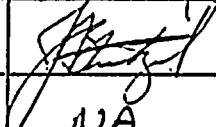
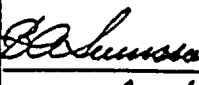


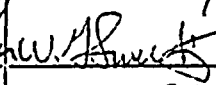
Revision No. 1

**TITLE** USE OF STABLE IODINE FOR THYROID BLOCKING  
DURING A RADIATION EMERGENCY

**SCOPE OF REVISION**

Revision 1 - Revise to agree with EPA recommendations in EPA 520/1-75-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents.

**SIGNATURES**

	ORIGINAL	Rev. 1	REV. 2	Rev. 3
PREPARED BY				
QUALITY ASSURANCE REVIEW				
INTERFACING DEPARTMENT HEAD CONCURRENCE	N.A.	NA		
DEPARTMENT HEAD APPROVAL	N.A.	NA		
PLANT NUCLEAR SAFETY COMMITTEE				
PLANT MANAGER APPROVAL				
DATE OF ISSUE	12-31-81	9-8-82		

LIST OF EFFECTIVE PAGES

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INDIANA AND MICHIGAN ELECTRIC COMPANY  
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USE OF STABLE IODINE FOR THYROID BLOCKING  
DURING A RADIATION EMERGENCY

1.0 OBJECTIVES

- 1.1 The objective of this procedure is to provide the mechanism and criteria for recommending usage of Potassium Iodide as a thyroid-blocking agent in a radiation emergency. The use of stable iodine is presently condoned only for emergency personnel and as specified, in accordance with state health regulations and under direction of state medical officials. Administration of Potassium Iodide for use by the general public is not advised by current information.

2.0 RESPONSIBILITIES

- 2.1 The Plant Manager is responsible for confirming the need for and for recommending the use of Potassium Iodide as a thyroid-blocking agent.
- 2.2 The Plant Radiation Protection Supervisor is responsible for providing adequate supplies of Potassium Iodide and for inventory and replacement as needed.

3.0 APPLICABILITY

- 3.1 This procedure is applicable whenever a measured or calculated Iodine dose is likely to equal or exceed 100 rem to the thyroid and/or 20 rem to the whole body.

4.0 INSTRUCTIONS

- 4.1 The Radiation Assessment Director/R.P. Manager/Radiation Control and Waste Handling Manager should notify the Plant Manager/EOF Manager of the anticipated need for the use of thyroid-blocking agent.
- 4.2 Upon notification by the Plant Manager/EOF Manager that use of Potassium Iodide as a thyroid-blocking agent is anticipated, the Radiation Protection Director shall designate when and who shall receive Iodine thyroid-blocking.

- 4.3 The On-Site Emergency Coordinator shall notify the Berrien County Sheriff's Department and the Michigan State Police of the intended usage of Iodine thyroid-blocking for designated emergency personnel.

NOTE: Phone numbers for all personnel are contained in Appendix A of these Emergency Plan Procedures. Storage locations and quantities of Potassium Iodide tablets are specified in 12 THP 6010.RAD.222, Emergency Station - Inventory.

- 4.4 Dispense one (1) 130mg Potassium Iodide tablet to each individual that could be expected to enter a High-Level Radio-Iodine Environment as indicated in step 3.1. The dosage of one table per day should be continued for ten (10) days, unless otherwise directed.
- 4.5 Records shall be maintained on all individuals who have been issued/or have taken Potassium Iodide tablets. Utilize Checklists A to document those individuals that were issued the tablets.

NOTE: Potassium Iodide tablets are most effective of administered prior to an exposure, but may be taken up to four (4) hours after an exposure and still result in a 50% reduction in Iodine uptake.

USE OF STABLE IODINE FOR THYROID BLOCKING  
DURING A RADIATION EMERGENCY

TABLETS ISSUED TO:

NAME: \_\_\_\_\_

SOCIAL SECURITY NO.: \_\_\_\_\_

DATE AND TIME ISSUED FOR USE: \_\_\_\_\_

ISSUE AUTHORIZED BY: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
DATE AND TIME  
FIRST TABLET TAKEN: \_\_\_\_\_

NOTICE: ONCE THE USE OF POTASSIUM IODIDE TABLETS HAS  
STARTED, ONE (1) TABLET SHOULD BE TAKEN EACH DAY  
FOR TEN (10) DAYS, UNLESS NOTIFIED OTHERWISE.

RECEIPT OF POTASSIUM IODIDE TABLETS ACKNOWLEDGED:

\_\_\_\_\_  
SIGNATURE